brother®

FACSIMILE EQUIPMENT

SERVICE MANUAL

MODEL: FAX255/FAX275/
FAX355MC/FAX375MC/
FAX-515/FAX-525DT/
FAX-525MC/HOMEFAX3

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PREFACE

This publication is a Service Manual covering the specifications, construction, theory of operation, and maintenance of the Brother facsimile equipment. It includes information required for field troubleshooting and repair—disassembly, reassembly, and adjustment—so that service personnel will be able to understand equipment function, to rapidly repair the equipment and order any necessary spare parts.

To perform appropriate maintenance so that the facsimile equipment is always in best condition for the customer, the service personnel must adequately understand and apply this manual.

This manual is made up of six chapters and appendices.

CHAPTER I.	**GENERAL DESCRIPTION**
CHAPTER II.	**INSTALLATION**
CHAPTER III.	**THEORY OF OPERATION**
CHAPTER IV.	**DISASSEMBLY/REASSEMBLY AND LUBRICATION**
CHAPTER V.	**MAINTENANCE MODE**
CHAPTER VI.	**ERROR INDICATION AND TROUBLESHOOTING**
APPENDICES	**EEPROM Customizing Codes & Circuit Diagrams**

This manual describes the model and its versions to be destined for major countries. The specifications and functions are subject to change depending upon each destination.

CHAPTER I.

GENERAL DESCRIPTION

CHAPTER I. GENERAL DESCRIPTION

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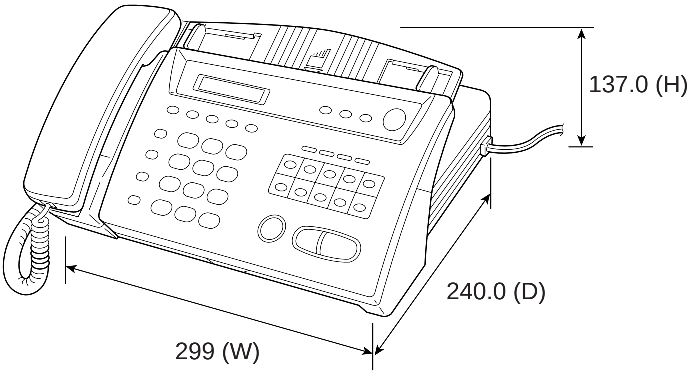
1. EQUIPMENT OUTLINE

1.1 External Appearance and Weight

The figure below shows the equipment appearance and approximate dimensions.

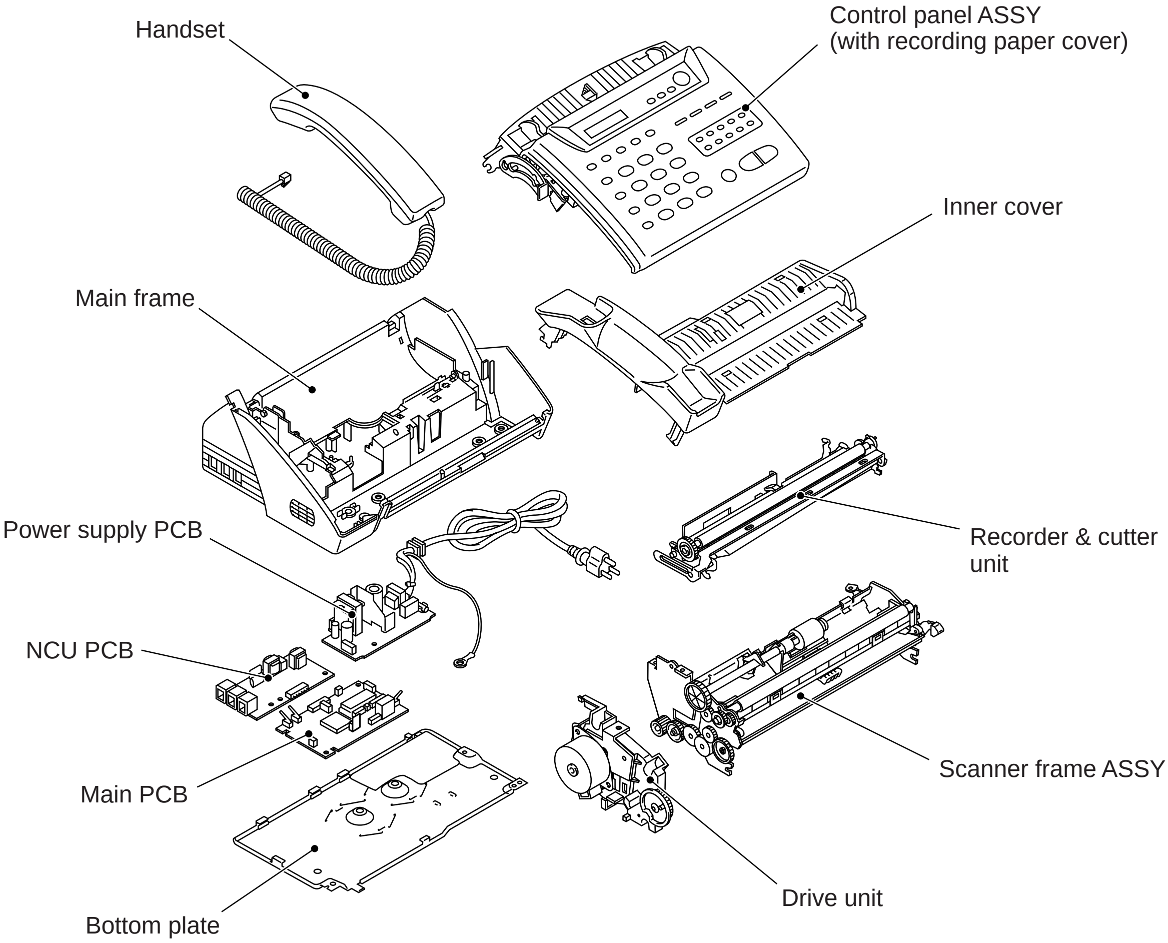

137.0 (H)
240.0 (D)
299 (W)

(Unit: mm)

Weight:	Machine proper	Approx. 2.9 kg (excluding a paper roll)
	In package	Approx. 4.0 kg

1.2 Components

The equipment consists of the following major components:


Handset
Control panel ASSY
(with recording paper cover)
Inner cover
Main frame
Power supply PCB
Recorder & cutter unit
NCU PCB
Scanner frame ASSY
Main PCB
Drive unit
Bottom plate

2. SPECIFICATIONS

Model	FAX255	FAX275
Color	Gray (1293)	White (1485)
Modem Speed	9600 bps	9600 bps
Coding Method	MH	MH
Transmission Speed	15 sec.	15 sec.
CCITT Group	G3	G3
Input/Output Width	Max. 8.5" x 8.5"	Max. 8.5" x 8.5"
Handset	Yes	Yes
Automatic Cutter	Yes	Yes
ADF Capacity (pages)	10	10
Anti-curl System	Yes	Yes
Roll Paper Size (Standard thermal/Therma PLUS)	164'/98' (1"-core)	164'/98' (1"-core)
LCD Size	16 x 1	16 x 1
On-screen Programming	Yes	Yes
Memory Capacity	No	No
Super Fine	Yes	Yes
Smoothing	Yes	Yes
Gray Scale (levels)	64 by Dithered Method	64 by Dithered Method
One-touch Dialing	10 locations	10 locations
Speed Dialing	10 locations	15 locations
Telephone Index	Yes	Yes
Super Telephone Index	No	No
Hook Key (TEL Key)	Yes	Yes
Fax/Tel Switch	Yes	Yes
TAD Interface	Yes	Yes
Enlargement/Reduction	No	No
Enhanced Remote Activation	Yes	Yes
Distinctive Ringing (FAX Ability)	Yes	Yes
Next-fax Reservation	No	Yes
Help	Yes, simple	Yes, simple
Caller ID (Caller Display)	Yes, w/ enhancement	Yes, w/ enhancement
Automatic Redialing	Yes	Yes
Auto Reduction	No	No
Multi-resolution Transmission	Yes	Yes
Polling	Yes (No secure polling)	Yes (No secure polling)
Delayed Transmission	Yes, 1 timer	Yes, 1 timer
Delayed Polling	No	No
Coverpage	No	No
Call Reservation	No	No
Call-back Message	No	No
Activity Report	No	No
Auto CNG Detection (New)	Yes	Yes
Transmission Verification Report	Yes, on LCD	Yes, on LCD
ECM	No	No
Broadcasting	No	No
Quick Scanning	No	No
Out-of-paper Reception	No	No
Multi Copy	No	No
Multi Transmission	No	No
PCI (Missing link)	No	No
Confidential Mailbox	No	No

Model	FAX355MC/FAX375MC	FAX-525DT/FAX-525MC
Color	White (1485)	Gray (1293)/White (1485)*
Modem Speed	14400 bps	14400 bps
Coding Method	MH	MH
Transmission Speed	9 sec.	10 sec.
CCITT Group	G3	G3
Input/Output Width	8.5"/8.5"	Max. 216/216 mm
Hold Key (Mute Key)	Yes	Yes
Automatic Cutter	Yes	Yes
ADF Capacity	10 pages	10 pages
Anti-curl System	Yes	Yes
Roll Paper Size (Standard thermal/Therma PLUS)	164'/98' (1"-core)	50 m/30 m (1"-core)
LCD Size	16 x 1	16 x 1
On-screen Programming	Yes	Yes
Memory Capacity	512 KB	512 KB
Super Fine	Yes	Yes
Smoothing	Yes	Yes
Gray Scale (levels)	64 by Dithered Method	64 by Dithered Method
One-touch Dialing	10	10
Speed Dialing	50	50
Telephone Index	Yes	Yes
Super Telephone Index	No	No
Speaker Phone	Yes (Full Duplex)	Yes (Full Duplex)
Fax/Tel Switch	Yes	Yes
TAD Interface	Yes	Yes
Enlargement/Reduction	No	No
Enhanced Remote Activation	Yes	Yes
Distinctive Ringing (FAX Ability)	Yes	Yes for DEN/ARL/NZ
Next-fax Reservation	Yes	Yes
Help	Yes, simple	Yes, simple
Caller ID (Caller Display)	Yes, w/ enhancement	Yes for UK/NLD/SWE/NOR/ BEL/FRA/DEN/ARL/NZ
Automatic Redialing	Yes	Yes
Auto Reduction	No	No
Multi-resolution Transmission	Yes	Yes
Polling	Yes (No secure polling)	Yes (w/ secure polling)
Delayed Transmission	Yes, 1 timer	Yes, 3 timers
Delayed Polling	No	Yes
Coverpage	No	No
Call Reservation	No	No
Call-back Message	No	No
Activity Report	No	Yes
Auto CNG Detection (New)	Yes	Yes
Transmission Verification Report	Yes, on LCD	Yes, on LCD
ECM	Yes	Yes
Broadcasting	Yes	Yes
Quick Scanning	Yes	Yes
Out-of-paper Reception	Yes, 20 pages	Yes, 20 pages
Multi Copy	Yes	Yes
Multi Transmission	No	No
PCI (Missing link)	Yes	Yes
Fax Forwarding	Yes	Yes
Fax-on-demand	No	No
Fax Retrieval	Yes	Yes
ICM Recording Time	15 minutes	15 minutes
Memo/2-way Recording	Yes	Yes
Page Memory	Yes, 20 pages	Yes, 20 pages
Paging	Yes	Yes
Personal Fax Mail box (5)	No	No
Personal Voice Mail Box (5)	No	No
Remote Control	Yes	Yes
TAD Type	DSP type	DSP type
Toll Saver	Yes	Yes
Voice-on-demand	No	No

* FAX-525DT: Gray (1293)
FAX-525MC: White (1485)

Model	FAX-515	HOMEFAX3
Color	Gray (1293), White (1485)*	White (1485)
Modem Speed	9600 bps	9600 bps
Coding Method	MH	MH
Transmission Speed	15 sec.	15 sec.
CCITT Group	G3	G3
Input/Output Width	Max. 8.5" x 8.5"	Max. 8.5" x 8.5"
Handset	Yes	Yes
Automatic Cutter	Yes	Yes
ADF Capacity (pages)	10	10
Anti-curl System	Yes	Yes
Roll Paper Size (Standard thermal/Therma PLUS)	50 m/30 m (1"-core)	50 m/30 m (1"-core)
LCD Size	16 x 1	16 x 1
On-screen Programming	Yes	Yes
Memory Capacity	No	No
Super Fine	Yes	Yes
Smoothing	Yes	Yes
Gray Scale (levels)	64 by Dithered Method	64 by Dithered Method
One-touch Dialing	10	8
Speed Dialing	50	50
Telephone Index	Yes	Yes
Super Telephone Index	No	No
Hook Key (TEL Key)	Yes	Yes
Fax/Tel Switch	Yes	Yes
TAD Interface	Yes	Yes
Enlargement/Reduction	No	No
Enhanced Remote Activation	Yes	Yes
Distinctive Ringing (FaxAbility)	Yes**	Yes
Next-fax Reservation	Yes	Yes
Help	Yes, Simple	Yes, simple
Caller ID (Caller Display)	Yes***	Yes
Automatic Redialing	Yes	Yes
Auto Reduction	No	No
Multi-resolution Transmission	Yes	Yes
Polling	Yes	Yes
Delayed Transmission	Yes, 1 timer	Yes, 1 timer
Delayed Polling	Yes	Yes
Coverpage	No	No
Call Reservation	No	No
Call-back Message	No	No
Activity Report	Yes (15)	Yes
Auto CNG Detection (New)	Yes	Yes
Transmission Verification Report	Yes, on LCD	Yes, on LCD
ECM	No	No
Broadcasting	No	No
Quick Scanning	No	No
Out-of-paper Reception	No	No
Multi Copy	No	No
Multi Transmission	No	No
PCI (Missing link)	No, Yes****	No

* White (1485) only for the Australian versions

** Only for the Australian and Danish versions

*** Only for the U.K., Dutch, Norwegian, Belgium, French, Danish and Swedish versions

**** Yes only for the Australian versions

CHAPTER II.

INSTALLATION

CHAPTER III.

THEORY OF OPERATION

CHAPTER III. THEORY OF OPERATION

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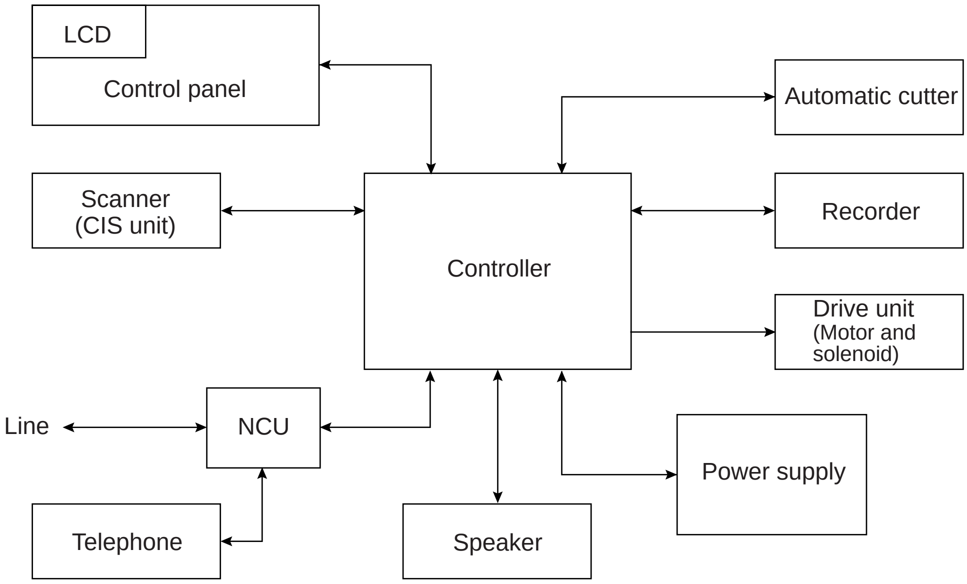
1. OVERVIEW


LCD
Control panel
Automatic cutter
Scanner
(CIS unit)
Controller
Recorder
Drive unit
(Motor and
solenoid)
Line
NCU
Power supply
Telephone
Speaker

2. MECHANISMS

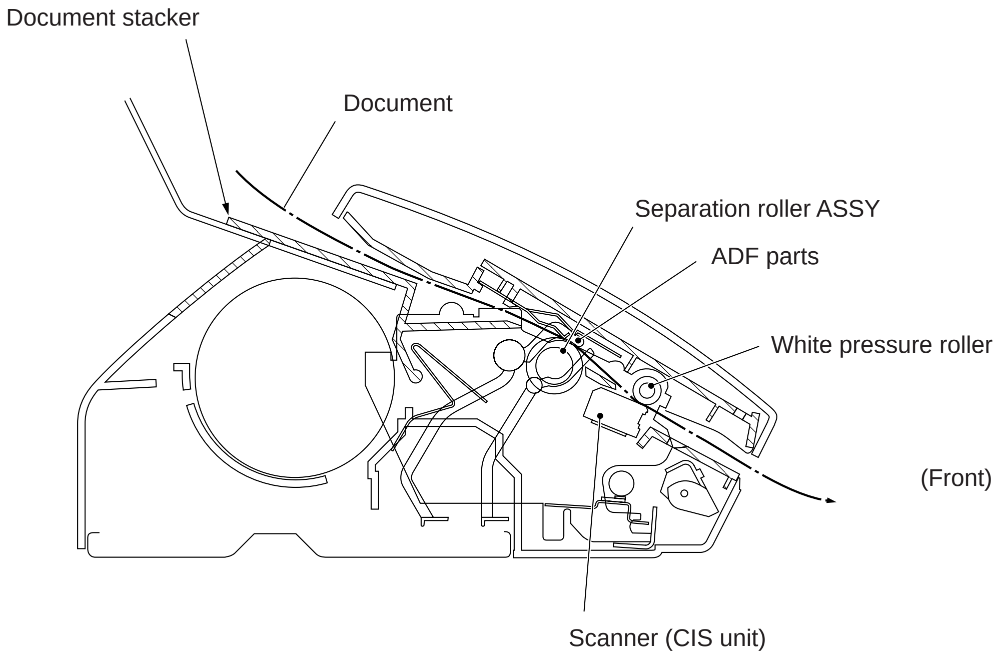
The equipment is classified into the following mechanisms:

■ Transmitting Mechanism	Feeding and scanning documents
■ Receiving Mechanism	Feeding recording paper and printing data
■ Power Transmission Mechanism	Switching the power transmission route
■ Sensors and Actuators	

2.1 Transmitting Mechanism (Feeding and scanning documents)

The transmitting mechanism consists of the document stacker, automatic document feeder (ADF), document feeding related rollers, scanner, and document sensors. (For details about the sensors, refer to Section 2.4.)

For the drive power source, refer to Section 2.3.



2.1.1 Automatic document feeder (ADF)

If the operator sets documents on the stacker and starts the transmitting operation, the ADF (consisting of the separation roller ASSY and ADF parts) feeds those documents into the equipment, starting from the bottom sheet to the top, page by page. Each document advances to the scanner, and then it is fed out of the equipment with the white pressure roller.

2.1.2 Scanner

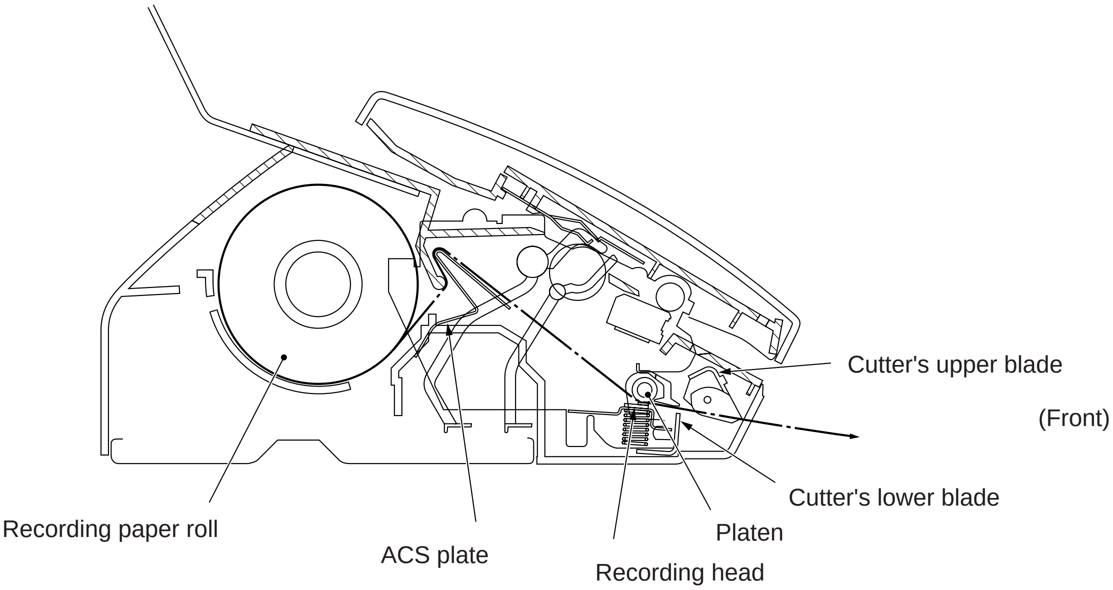
The scanner uses a contact image sensor (CIS) unit which consists of an LED array illuminating documents, a self-focus lens array collecting the reflected light, a CIS PCB carrying out photoelectric conversion to output picture element data, and a cover glass on which a document advances. When the document passes between the white pressure roller and the cover glass, it is scanned.

2.2 Receiving Mechanism (Feeding recording paper and printing data)

The receiving mechanism consists of the recording paper roll holder, anti-curl system (ACS) plate, platen, thermal recording head, automatic cutter, and sensors. (For details about the sensors, refer to Section 2.4.)

The recording paper is routed on the ACS plate to the recording head which prints onto the heat-sensitive recording paper pressed by the platen according to received image signals. The printed paper is further fed through the cutter chute and cut by the automatic cutter page by page.

For the drive power source, refer to Section 2.3.



2.2.1 Anti-curl system (ACS)

The ACS eliminates curl peculiar to rolled recording paper by curving the paper towards the opposite side of the curl with the ACS plate.

2.2.2 Automatic cutter

The automatic paper cutter consists of an upper blade (rotary) and a lower blade (stationary). As the upper blade rotates around the left end hub, the recording paper will be cut. Upon completion of cutting, the upper blade returns to its home position which is detected by the cutter HP sensor.

2.2.3 Recorder

The recorder, which is incorporated in the middle of the machine, consists of the recording head unit, coil spring, and platen. It prints according to received image signals.

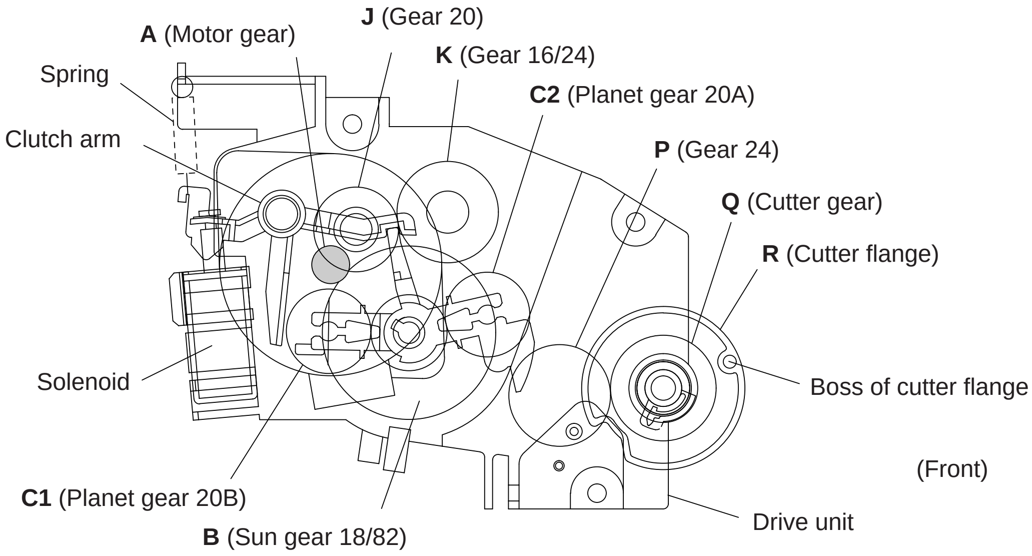
2.3 Power Transmission Mechanism

The equipment has a single drive motor whose power transmission route can be switched by the planetary gear train and the solenoid. This switching allows the equipment to function in four operation modes (recording, scanning, copying, and cutter driving modes).

2.3.1 Structure of the gear train

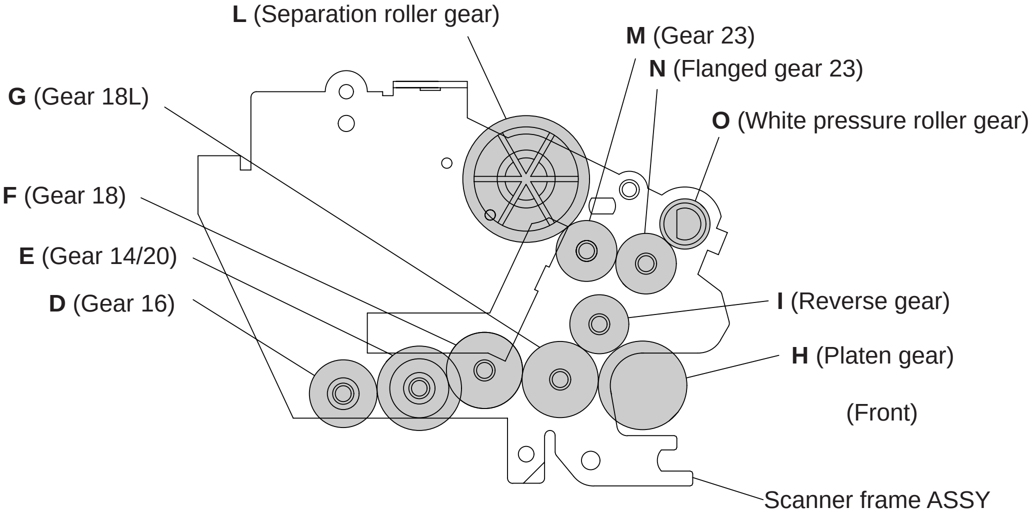
The gear train consists of two groups of gears: one group on the drive unit and the other on the scanner frame ASSY. Mounting the drive unit onto the scanner frame ASSY makes those two groups of gears engage with each other so that the rotation torque of the motor on the drive unit is transmitted to the separation roller, white pressure roller, and platen.

Shown below are a group of gears, the motor and solenoid on the drive unit. The cutter gear (Q) is integrated in the cutter flange (R) whose boss is placed in the hole provided in the cutter's upper blade.


A (Motor gear)
J (Gear 20)
K (Gear 16/24)
C2 (Planet gear 20A)
P (Gear 24)
Q (Cutter gear)
R (Cutter flange)
Spring
Clutch arm
Solenoid
Boss of cutter flange
(Front)
C1 (Planet gear 20B)
B (Sun gear 18/82)
Drive unit

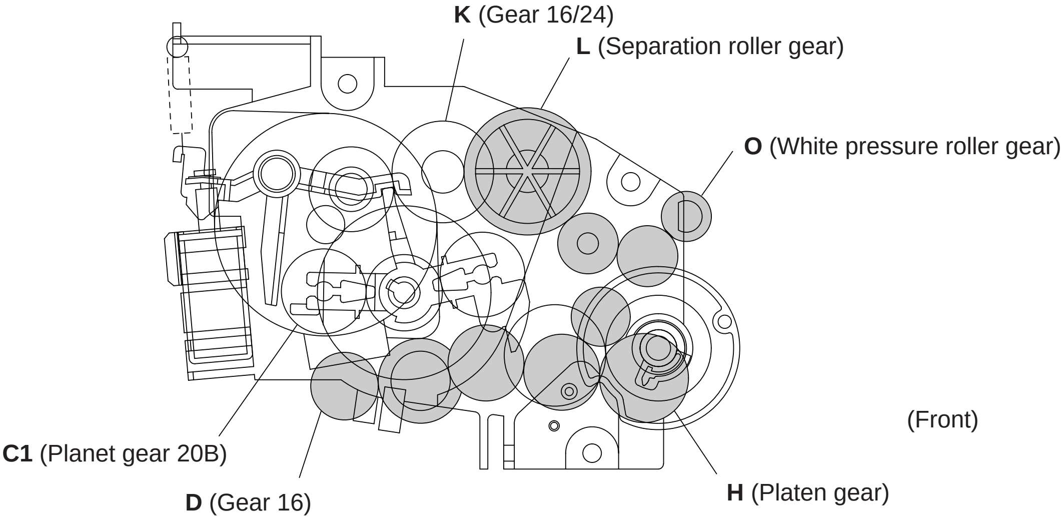
Drive Unit (viewed from the motor mounting side)

Shown below is a group of gears on the scanner frame ASSY.


L (Separation roller gear)
M (Gear 23)
N (Flanged gear 23)
G (Gear 18L)
O (White pressure roller gear)
F (Gear 18)
E (Gear 14/20)
D (Gear 16)
I (Reverse gear)
H (Platen gear)
(Front)
Scanner frame ASSY

Scanner Frame ASSY

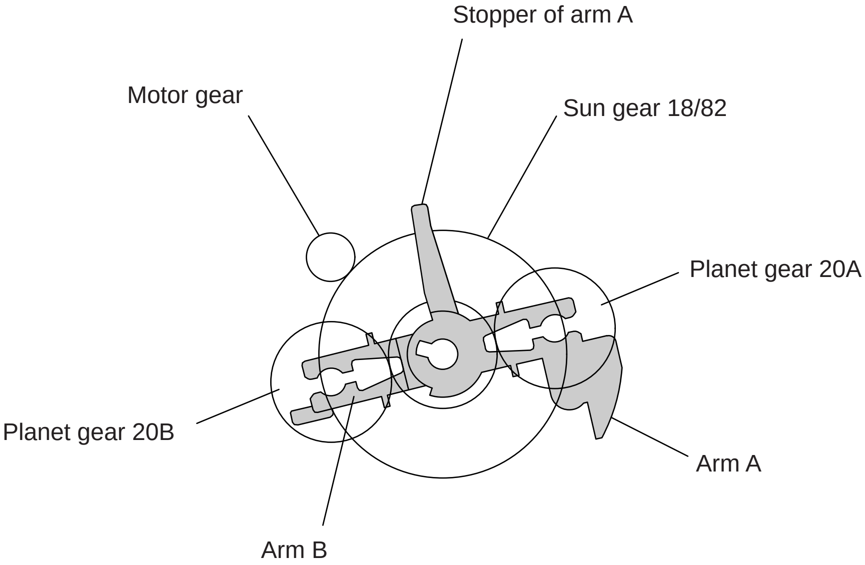
Shown below is a gear train constructed by combining the drive unit and scanner frame ASSY. The motor rotation is transmitted via the planet gear 20B (C1) to the gear 16 (D) and via the gear 16/24 (K) to the separation roller gear (L).


K (Gear 16/24)
L (Separation roller gear)
O (White pressure roller gear)
(Front)
C1 (Planet gear 20B)
D (Gear 16)
H (Platen gear)

Combination of Drive Unit and Scanner Frame ASSY

2.3.2 Description of planetary gear system

The planetary gear train consists of the sun gear 18/82, two planet gears 20, arm A, and arm B, as shown below.



Planetary Gear System

If the motor rotates, the sun gear 18/82 rotates so that the rotational torque is transmitted to the engagement between the sun gear and the planet gears 20. Since the arms and planet gears are so designed that the moment of the arms is less than that of the planet gears, the arms turn around the center shaft in the same direction as the sun gear 18/82.

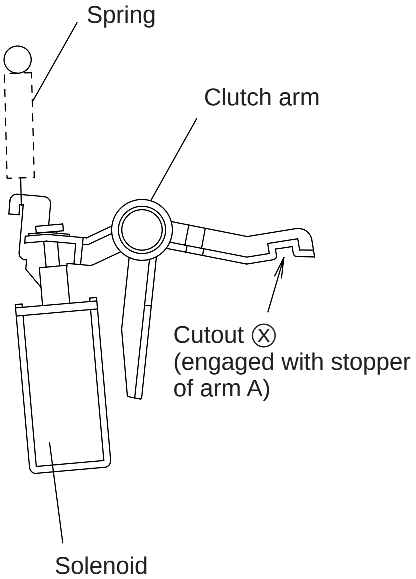
If the planet gear(s) becomes engaged with any other gear so that the arm cannot turn any more, the rotational torque of the sun gear 18/82 is transmitted to that planet gear. Accordingly, the planet gear starts rotation in the opposite direction of the sun gear 18/82.

2.3.3 Power transmission for four operation modes

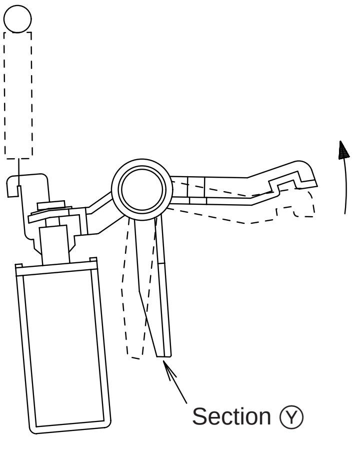
Depending upon the solenoid ON/OFF state and the motor rotation direction, the planetary gear train switches the power transmission route for the four operation modes.

Solenoid ON/OFF state

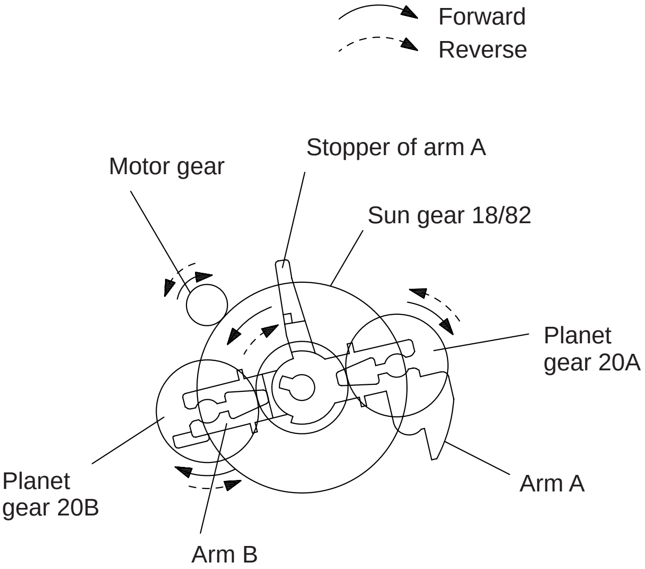
Solenoid: OFF


Spring
Clutch arm
Cutout Ⓧ
(engaged with stopper
of arm A)
Solenoid

Solenoid: ON



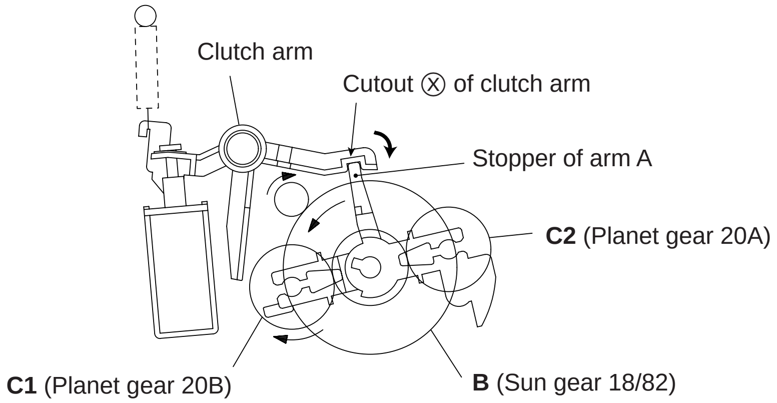
Motor rotation direction


Forward
Reverse
Motor gear
Stopper of arm A
Sun gear 18/82
Planet
gear 20A
Arm A
Planet
gear 20B
Arm B

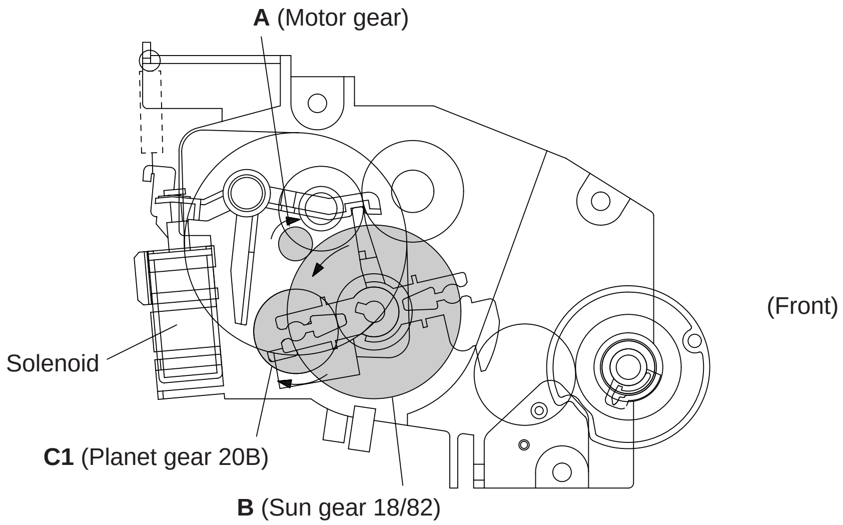
[1] Recording mode (Solenoid: OFF, Motor rotation: Forward)

In the recording mode, the control electronics deactivates the solenoid. When the motor rotates in the forward direction, the clutch arm turns clockwise with the spring and its cutout ⓧ becomes engaged with the stopper of arm A. Once arm A is locked, the planet gear 20A (C2) will not be engaged with any other gear but simply idle.

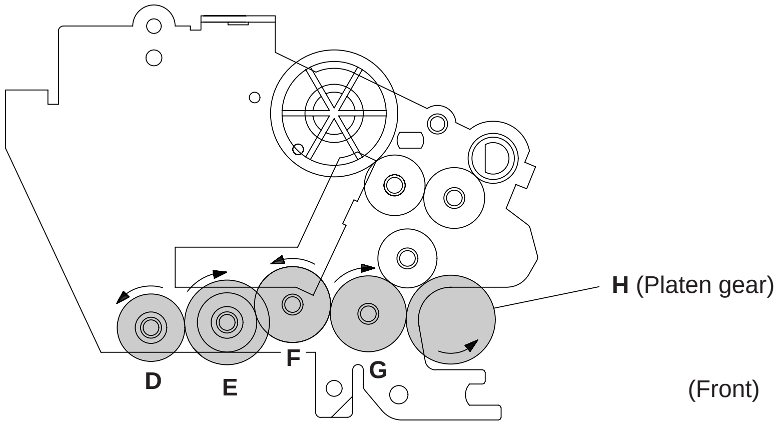
The motor rotation turns the sun gear 18/82 (B) counterclockwise so that the planet gear 20B (C1) transmits the rotation via the gears D through G to the platen gear (H).


Clutch arm
Cutout ⓧ of clutch arm
Stopper of arm A
C2 (Planet gear 20A)
C1 (Planet gear 20B)
B (Sun gear 18/82)

Arm A Locked by Cutout ⓧ of Clutch Arm


A (Motor gear)
(Front)
Solenoid
C1 (Planet gear 20B)
B (Sun gear 18/82)

Active Gears on the Drive Unit

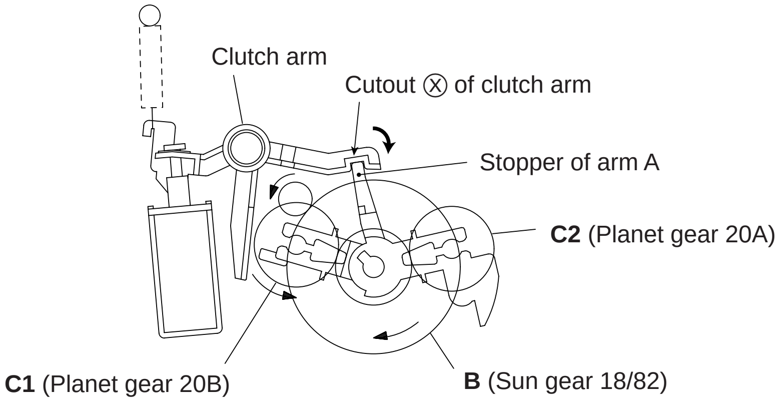

H (Platen gear)
D
E
F
G
(Front)

Active Gears on the Scanner Frame ASSY

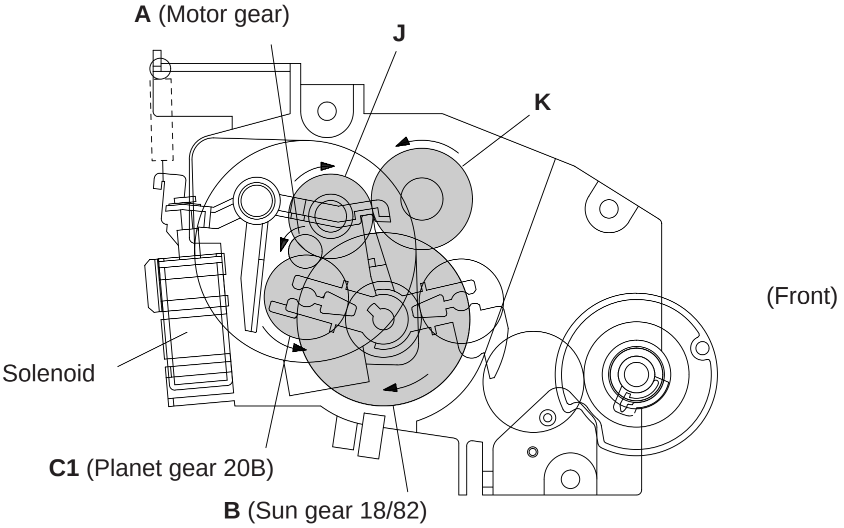
[2] Scanning mode (Solenoid: OFF, Motor rotation: Reverse)

Just as in the recording mode, the control electronics deactivates the solenoid in the scanning mode to lock arm A.

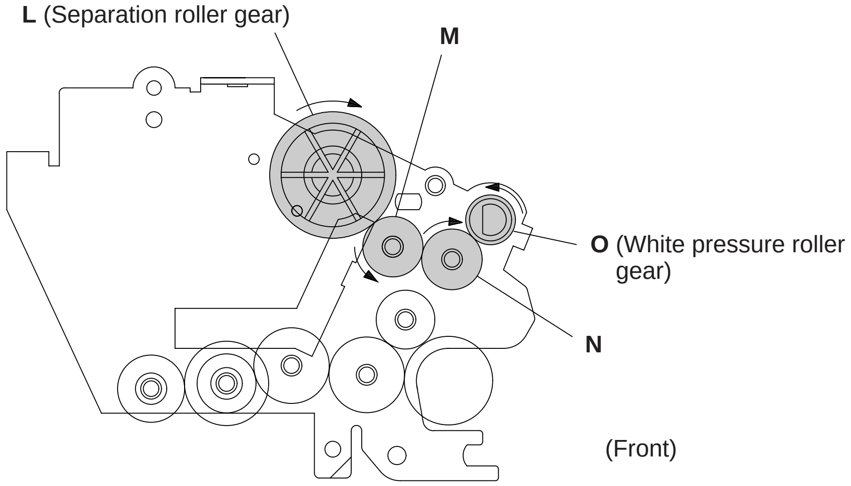
The motor rotates in the reverse direction and the sun gear 18/82 (B) rotates clockwise so that the planet gear 20B (C1) transmits the rotation to the separation roller gear (L) and white pressure roller gear (O) via the several gears.


Clutch arm
Cutout ⓧ of clutch arm
Stopper of arm A
C2 (Planet gear 20A)
C1 (Planet gear 20B)
B (Sun gear 18/82)

Arm A Locked by Cutout ⓧ of Clutch Arm


A (Motor gear)
J
K
(Front)
Solenoid
C1 (Planet gear 20B)
B (Sun gear 18/82)

Active Gears on the Drive Unit

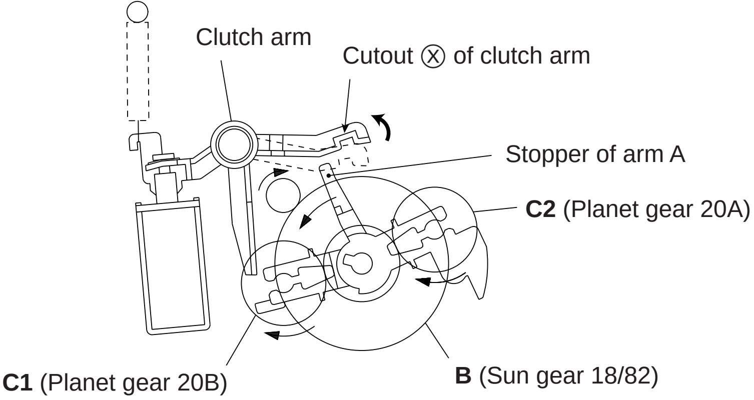

L (Separation roller gear)
M
O (White pressure roller gear)
N
(Front)

Active Gears on the Scanner Frame ASSY

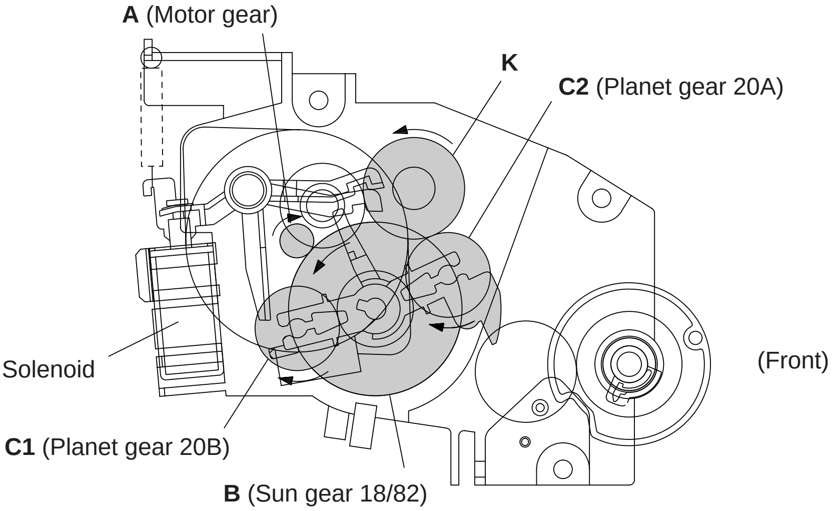
[3] Copying mode (Solenoid: ON→OFF, Motor rotation: Forward)

The control electronics at first activates the solenoid to release the stopper of arm A from the cutout ⓧ of the clutch arm while rotating the motor in the forward direction. Accordingly, the sun gear 18/82 (B) rotates counterclockwise so that both the planet gears 20B (C1) and 20A (C2) transmit the rotation; C1 rotation to the platen gear (H) and C2 rotation to the separation roller gear (L) and white pressure roller gear (O).

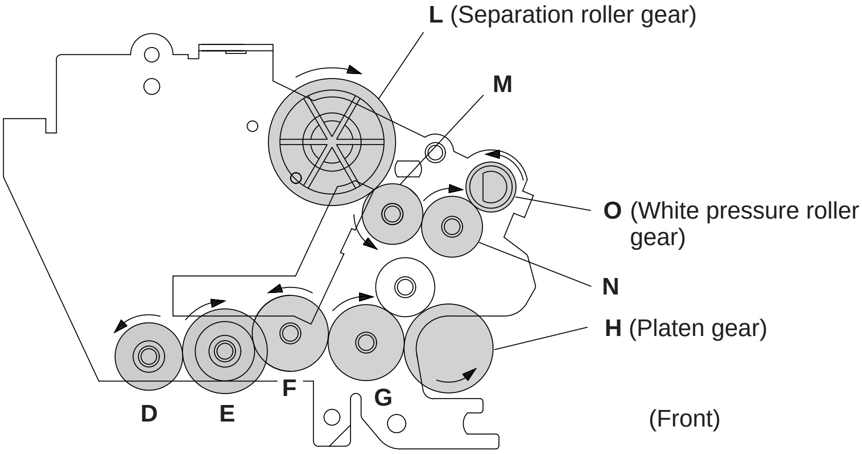
Once the planet gear 20A (C2) becomes engaged with gear K, the control electronics deactivates the solenoid.


Clutch arm
Cutout ⓧ of clutch arm
Stopper of arm A
C2 (Planet gear 20A)
C1 (Planet gear 20B)
B (Sun gear 18/82)

Arm A Released from Cutout ⓧ of Clutch Arm


A (Motor gear)
K
C2 (Planet gear 20A)
Solenoid
(Front)
C1 (Planet gear 20B)
B (Sun gear 18/82)

Active Gears on the Drive Unit

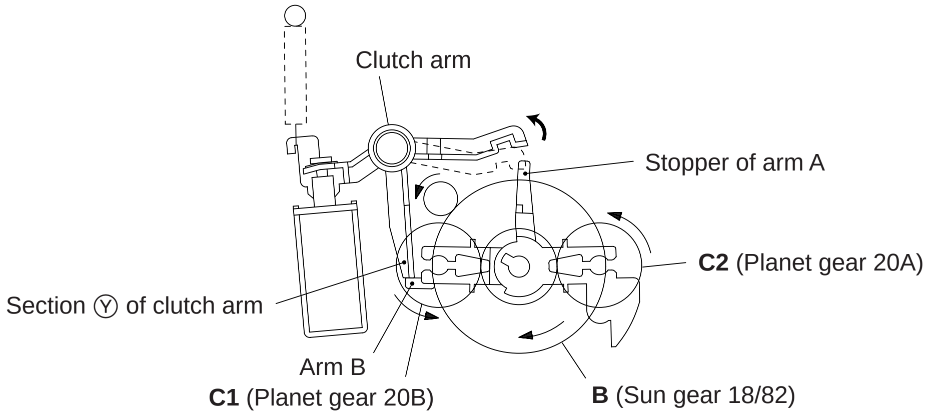

L (Separation roller gear)
M
O (White pressure roller gear)
N
H (Platen gear)
D
E
F
G
(Front)

Active Gears on the Scanner Frame ASSY

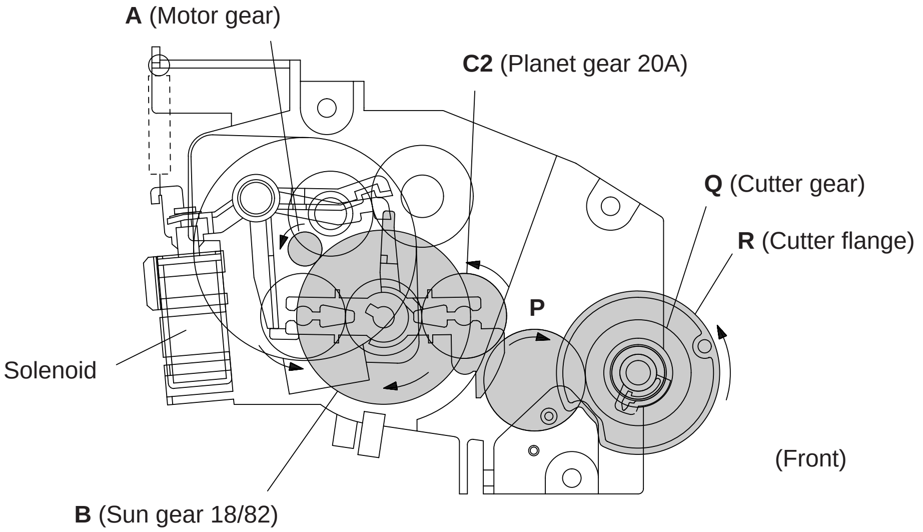
[4] Cutter driving mode (Solenoid: ON, Motor rotation: Reverse)

The control electronics activates the solenoid to release the stopper of arm A from the clutch arm. When the motor rotates in the reverse direction, the sun gear 18/82 (B) rotates clockwise so that the planet gear 20A (C2) transmits the rotation to the cutter gear (Q) via gear P.

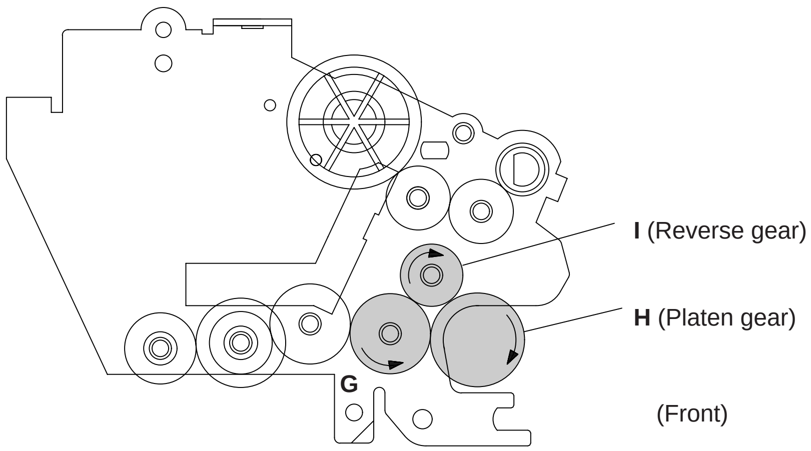
Since the planet gear 20B (C1) is blocked by the section Ⓨ of the clutch arm, it is merely idle without engaging with any other gear.


Clutch arm
Stopper of arm A
C2 (Planet gear 20A)
Section Ⓨ of clutch arm
Arm B
C1 (Planet gear 20B)
B (Sun gear 18/82)

Arm B Blocked by Section Ⓨ of Clutch Arm

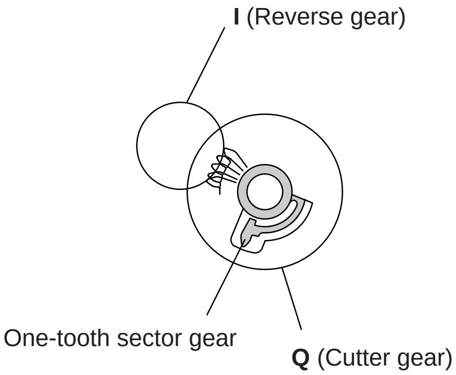

A (Motor gear)
C2 (Planet gear 20A)
Q (Cutter gear)
R (Cutter flange)
P
Solenoid
(Front)
B (Sun gear 18/82)

Active Gears on the Drive Unit


I (Reverse gear)
H (Platen gear)
G
(Front)

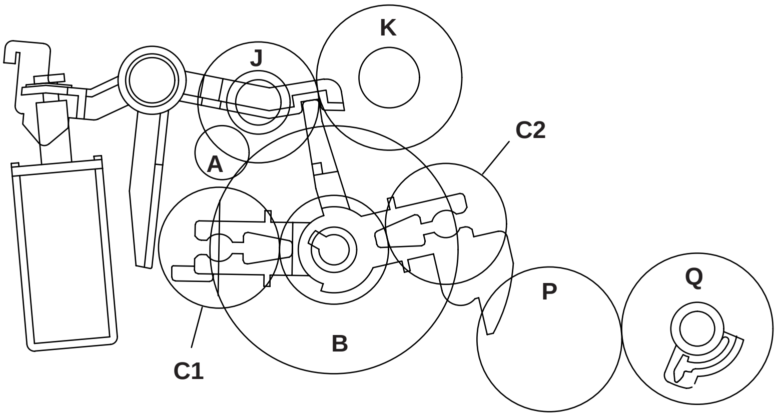
Active Gears on the Scanner Frame ASSY

The cutter gear (Q) is a two-stepped gear whose inside gear is a one-tooth sector gear. While the cutter gear (Q) rotates by one turn for one stroke of the upper blade of the cutter, the one-tooth sector gear slightly turns the platen gear (H) clockwise via the reverse gear (I) to feed the recording paper back into the equipment. This prevents the upper blade of the cutter from scratching the leading edge of the remaining paper.

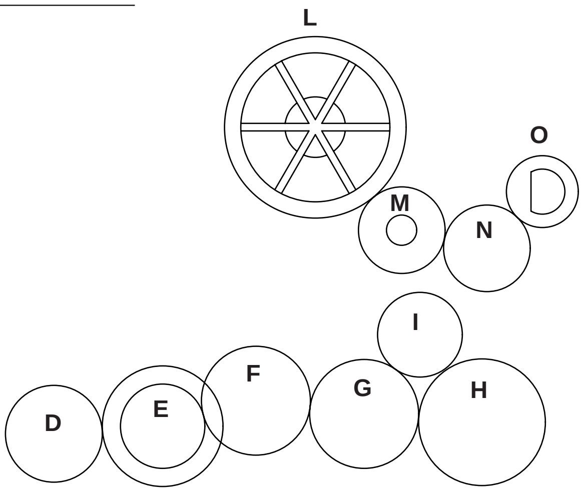

I (Reverse gear)
One-tooth sector gear
Q (Cutter gear)

2.3.4 Power transmission route

Rotation of the motor gear is transmitted as shown below.



Gears on the Drive Unit



Gears on the Scanner Frame ASSY

A: Motor gear
B: Sun gear 18/82
C1: Planet gear 20B
C2: Planet gear 20A
D: Gear 16
E: Gear 14/20
F: Gear 18
G: Gear 18L
H: Platen gear
I: Reverse gear
J: Gear 20
K: Gear 16/24
L: Separation roller gear
M: Gear 23
N: Flanged gear 23
O: White pressure roller gear
P: Gear 24
Q: Cutter gear

[1] Recording Mode (Solenoid: OFF, Motor rotation: forward)

A → B <
C1 → D → E → F → G → H
C2 (idling)

[2] Scanning Mode (Solenoid: OFF, Motor rotation: reverse)

A → B <
C1 → J → K → L → M → N → O
C2 (idling)

[3] Copying Mode (Solenoid: ON→OFF, Motor rotation: forward)

A → B <
C1 → D → E → F → G → H
C2 → K → L → M → N → O

[4] Cutter Driving Mode (Solenoid: ON, Motor rotation: reverse)

A → B <
C1 (idling)
C2 → P → Q (→ I → G → H)
(Reverse-feeds recording paper)

2.4 Sensors and Actuators

This equipment has two photosensors and four mechanical switches as described below.

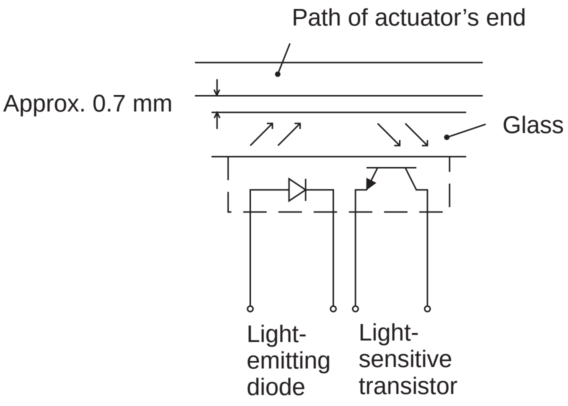
Sensor name	Type	Located on
Document front sensor	Photosensor (PH1)	Main PCB
Document rear sensor	Photosensor (PH2)	Main PCB
Paper empty (PE) sensor	Mechanical switch (SW1)	Main PCB
Cover sensor	Mechanical switch (SW2)	Main PCB
Hook switch sensor	Mechanical switch (SW3)	Main PCB
Cutter home position (HP) sensor	Mechanical switch	Drive unit

- Document front sensor which detects the presence of documents.
- Document rear sensor which detects the leading and trailing edges of pages to tell the control circuitry when the leading edge of a new page has reached the starting position and when the scan for that page is over.

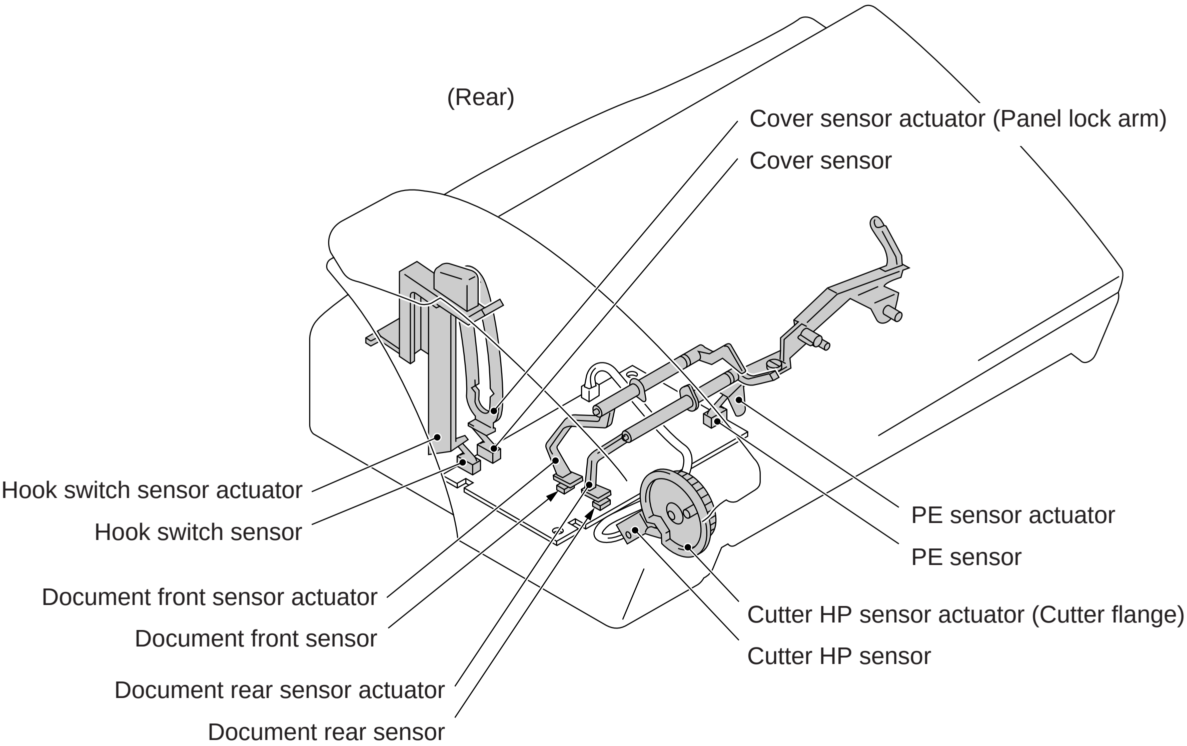
These photosensors are of a reflection type consisting of a light-emitting diode and a light-sensitive transistor. Each of them has an actuator separately arranged (see the next page). When an actuator is not activated, its white end lies in the path of light issued from the light-emitting diode and reflects its light into the light-sensitive transistor. If a document is fed in so as to activate the actuator, the actuator's white end goes out of the light path. With no reflected light to go into the light-sensitive transistor, the sensor detects the presence of documents.

- PE sensor which detects when the recording paper runs out.
- Cover sensor which detects whether the control panel is closed.
- Hook switch sensor which detects whether the handset is placed on the handset mount.
- Cutter HP sensor which detects the home position of the upper rotary blade of the automatic cutter.

Each of these four sensors has an actuator separately arranged (see the next page). If an actuator is activated, its lower end releases or pushes down the lever provided on the corresponding sensor so that the sensor signals the detection.



Photosensor

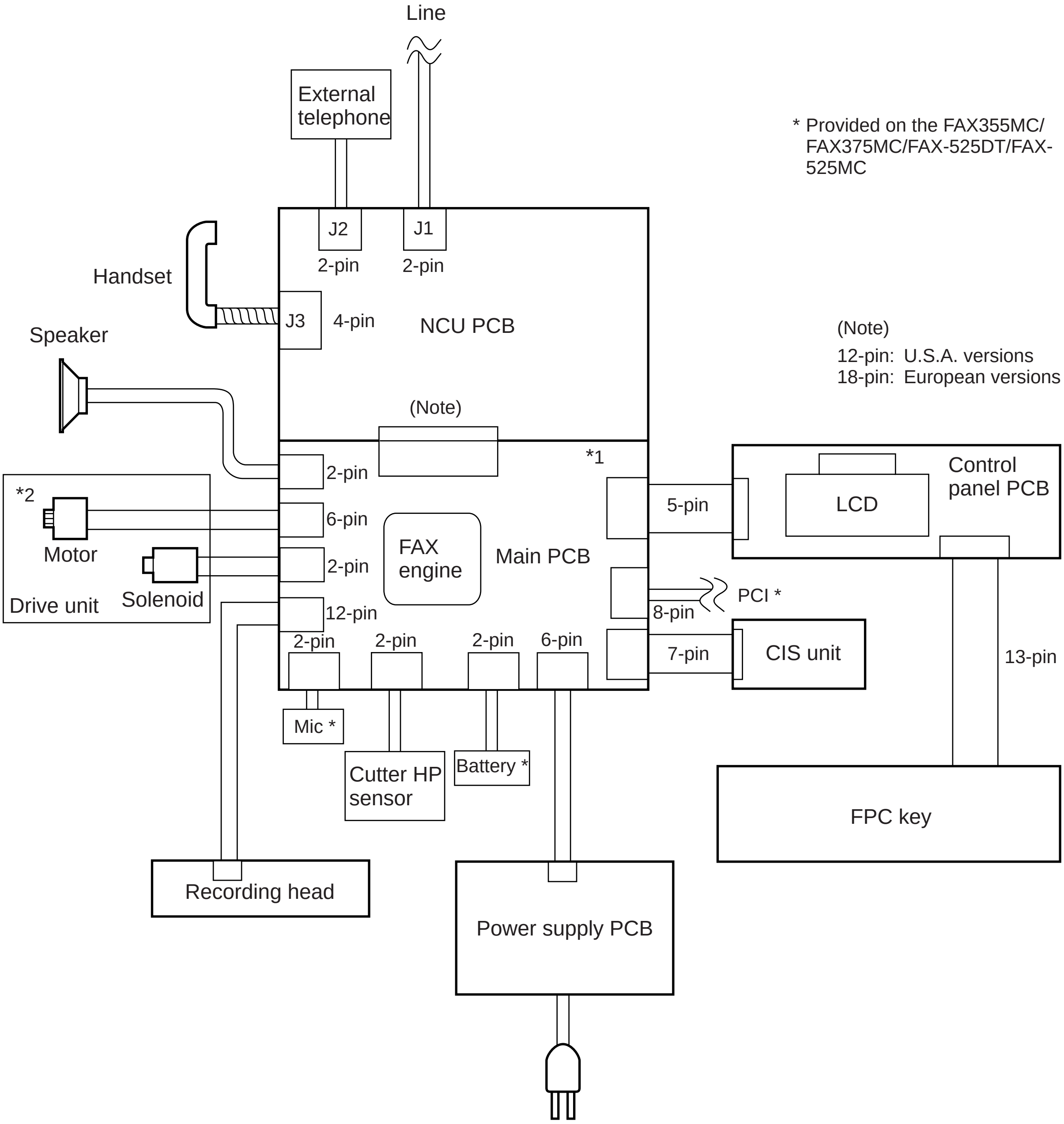

(Rear)
Cover sensor actuator (Panel lock arm)
Cover sensor
Hook switch sensor actuator
Hook switch sensor
Document front sensor actuator
Document front sensor
Document rear sensor actuator
Document rear sensor
PE sensor actuator
PE sensor
Cutter HP sensor actuator (Cutter flange)
Cutter HP sensor

Location of Sensors and Actuators

3. CONTROL ELECTRONICS

3.1 Configuration

The hardware configuration of the facsimile equipment is shown below.


Line
External telephone
J2
2-pin
J1
2-pin
Handset
J3
4-pin
NCU PCB
Speaker
(Note)
*1
2-pin
*2
6-pin
Motor
2-pin
FAX engine
Main PCB
Drive unit
Solenoid
12-pin
2-pin
2-pin
2-pin
6-pin
5-pin
Control panel PCB
LCD
PCI *
8-pin
7-pin
CIS unit
13-pin
Mic *
Cutter HP sensor
Battery *
FPC key
Recording head
Power supply PCB

* Provided on the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC

(Note)
12-pin: U.S.A. versions
18-pin: European versions

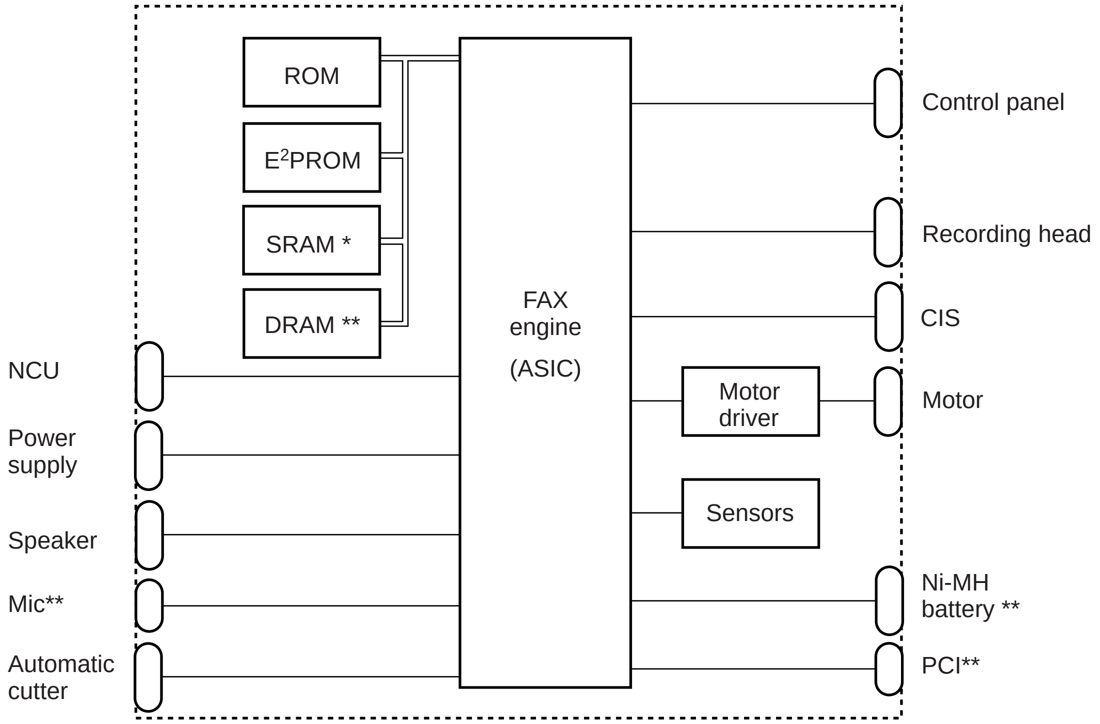
*1 On the main PCB are these sensors:
- PE sensor (SW1)
- Cover sensor (SW2)
- Hook switch sensor (SW3)
- Document front sensor (PH1)
- Document rear sensor (PH2)

*2 On the drive unit is the cutter HP sensor.

Configuration of Facsimile Equipment

3.2 Main PCB

The main PCB, which is the nucleus controlling the entire operation of the equipment, consists of a FAX engine (ASIC), memories, MODEM, motor drive circuitry, sensor detection circuitry, and analog circuits for scanning, recording, and power transmission shifting.


ROM
E2PROM
SRAM *
DRAM **
FAX engine (ASIC)
Control panel
Recording head
CIS
Motor driver
Motor
Sensors
Ni-MH battery **
PCI**
NCU
Power supply
Speaker
Mic**
Automatic cutter

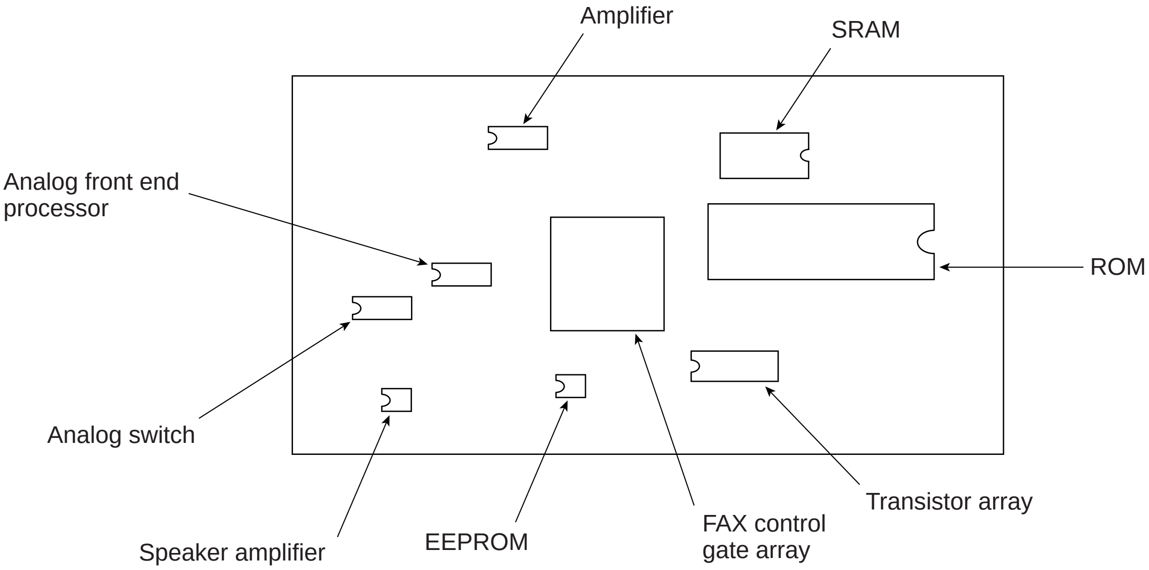
E^{2}PROM: Electrically Erasable Programmable Read-only Memory

* Provided on the FAX255/FAX275/FAX-515/HOMEFAX3

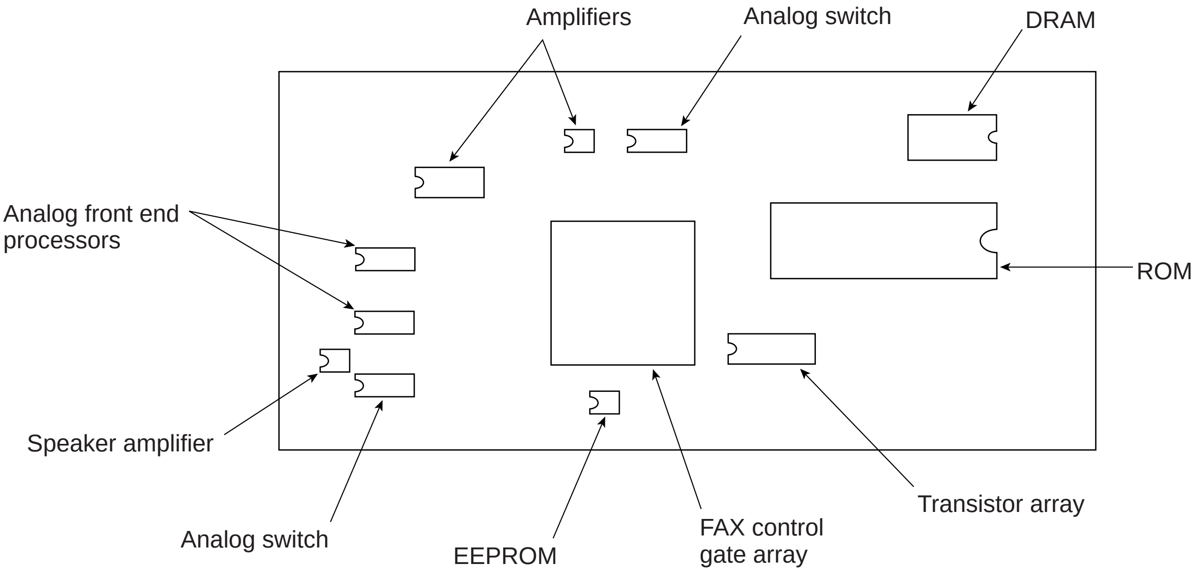
** Provided on the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC

Block Diagram of Main PCB

FAX255/FAX275/FAX-515/HOMEFAX3


Amplifier
SRAM
Analog front end processor
ROM
Analog switch
Speaker amplifier
EEPROM
FAX control gate array
Transistor array

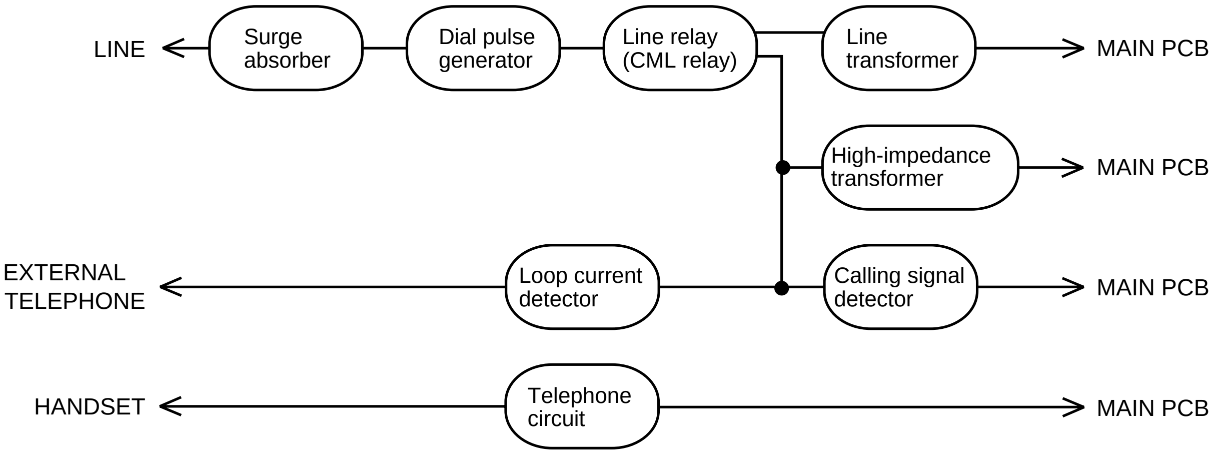
FAX355MC/FAX375MC/FAX-525DT/FAX-525MC

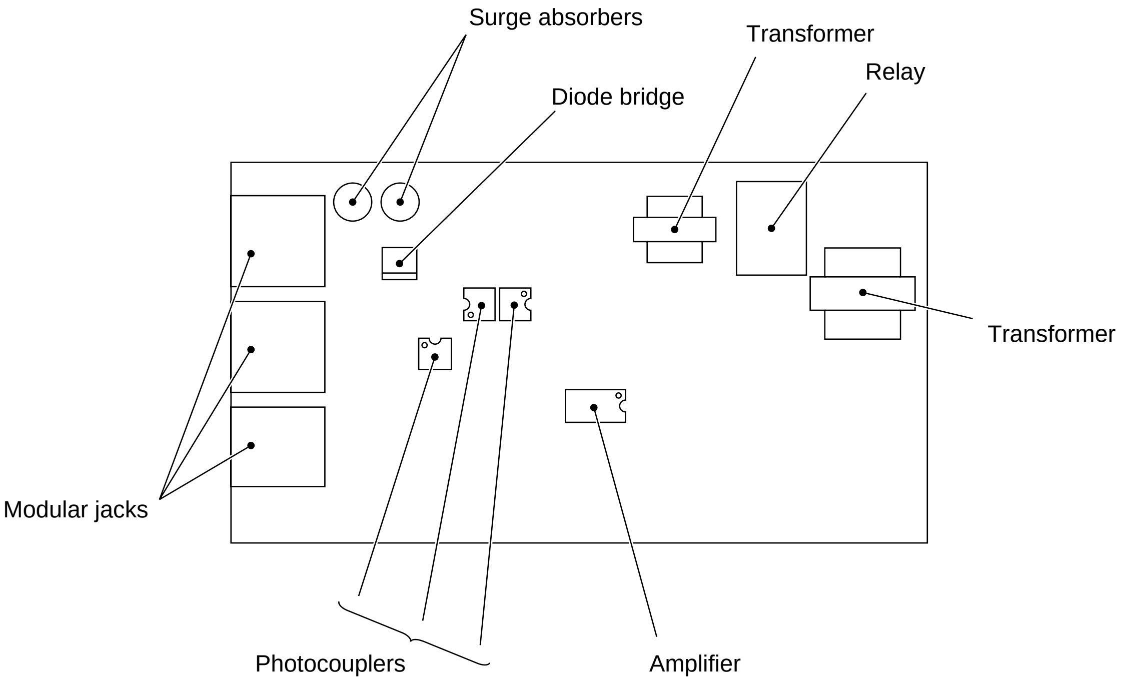

Amplifiers
Analog switch
DRAM
Analog front end processors
ROM
Speaker amplifier
Analog switch
EEPROM
FAX control gate array
Transistor array

3.3 NCU PCB

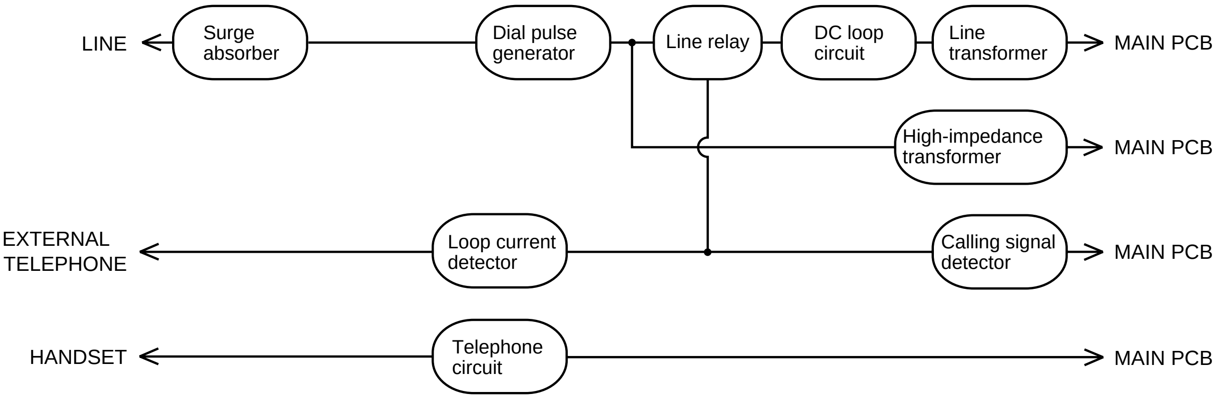
The NCU PCB switches the communications line to telephone or built-in MODEM, under the control of the main PCB.

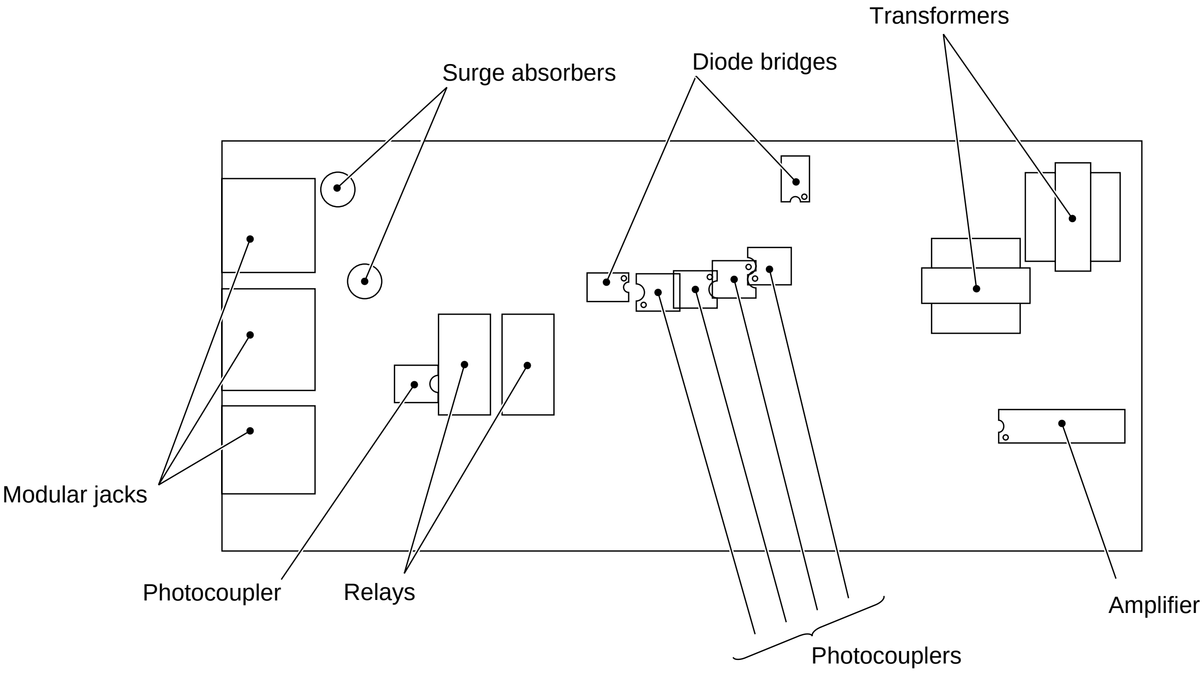
U.S.A. versions


LINE
Surge absorber
Dial pulse generator
Line relay (CML relay)
Line transformer
MAIN PCB
High-impedance transformer
MAIN PCB
EXTERNAL TELEPHONE
Loop current detector
Calling signal detector
MAIN PCB
HANDSET
Telephone circuit
MAIN PCB


Surge absorbers
Transformer
Relay
Diode bridge
Transformer
Modular jacks
Photocouplers
Amplifier

European versions


LINE
Surge absorber
Dial pulse generator
Line relay
DC loop circuit
Line transformer
MAIN PCB
High-impedance transformer
MAIN PCB
EXTERNAL TELEPHONE
Loop current detector
Calling signal detector
MAIN PCB
HANDSET
Telephone circuit
MAIN PCB


Transformers
Diode bridges
Surge absorbers
Modular jacks
Photocoupler
Relays
Photocouplers
Amplifier

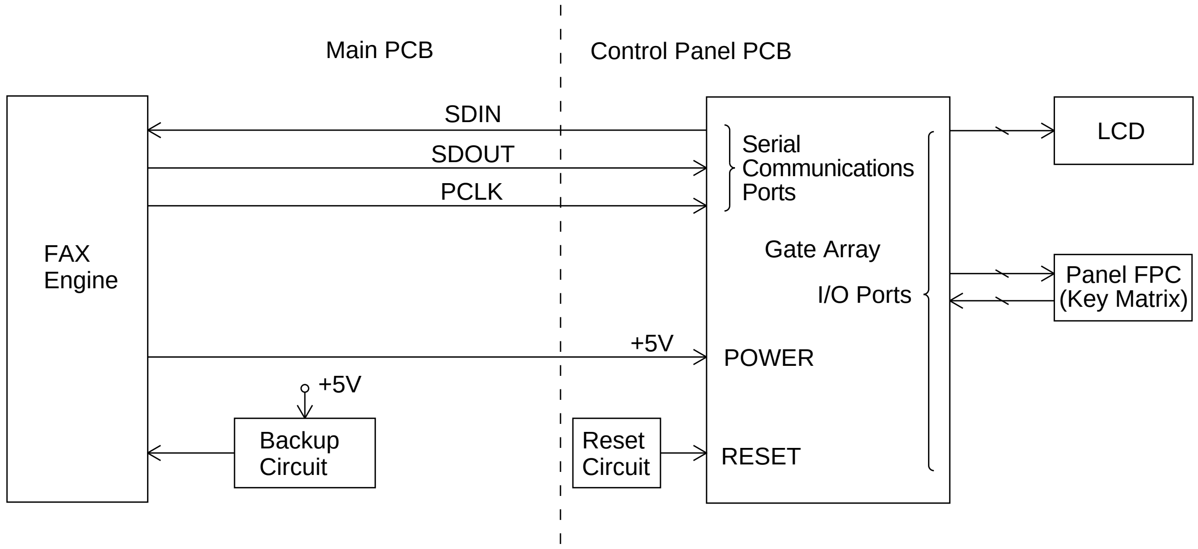
3.4 Control Panel PCB

The control panel PCB and the main PCB communicate with each other by serially transmitting commands and data.

The control panel unit consists of a gate array and LCD, which are controlled by the gate array according to commands issued from the FAX engine on the main PCB.

The calendar clock is backed up by the backup circuit on the main PCB.

The panel FPC is a flexible keyboard PCB which integrates the key matrix having rubber keytops.


Main PCB
Control Panel PCB
FAX Engine
SDIN
SDOUT
PCLK
+5V
+5V
Backup Circuit
Reset Circuit
Serial Communications Ports
Gate Array
I/O Ports
POWER
RESET
LCD
Panel FPC (Key Matrix)

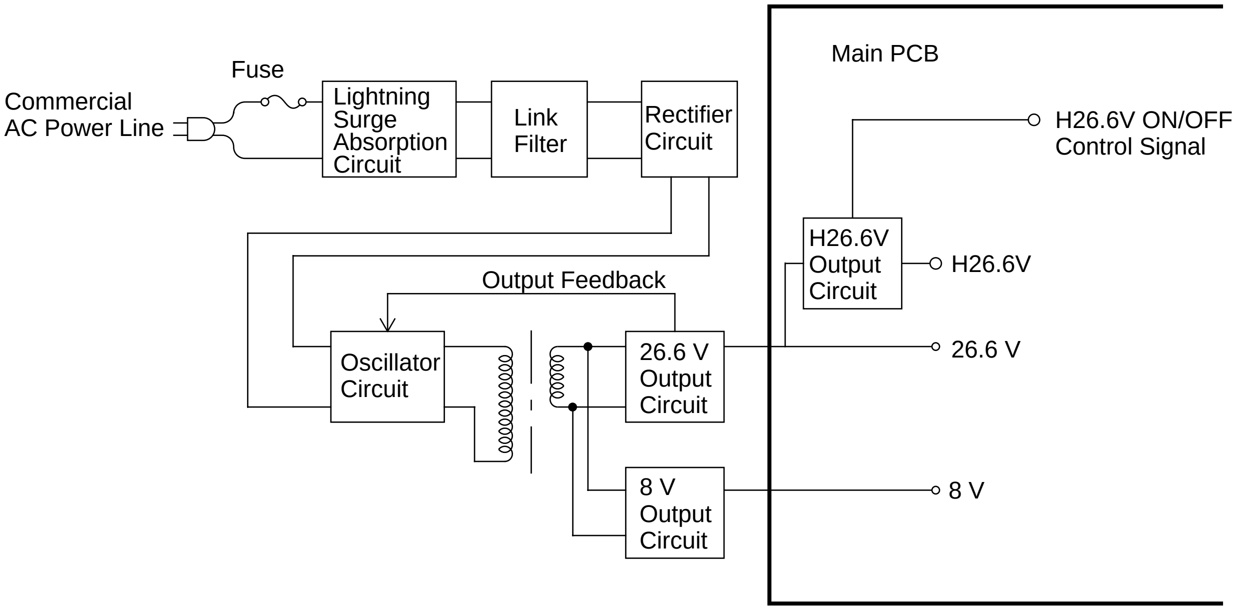
Control Panel PCB and its Related Circuit

3.5 Power Supply PCB

The power supply uses the switching regulation system to generate DC power (+26.6V and +8V) from a commercial AC power supply.

The +26.6V source is stabilized and fed to the motor and solenoid for feeding documents and recording paper or activating the automatic cutter, and also fed to the CIS LED array. It is also fed to the main PCB where the H26.6V source is generated. The H26.6V source outputs 26.6V only when the H26.6V ON/OFF control signal is High, for driving the recording head.

The +8V source is not stabilized and fed to the speaker. It is also fed to the main PCB where the 3-terminal regulator eliminates unstabilized components of the +8V source to generate stabilized +5V source. The +5V source is fed to the logic, control panel, and sensors.


Main PCB
Fuse
Commercial AC Power Line
Lightning Surge Absorption Circuit
Link Filter
Rectifier Circuit
H26.6V ON/OFF Control Signal
H26.6V Output Circuit
H26.6V
Output Feedback
Oscillator Circuit
26.6 V Output Circuit
26.6 V
8 V Output Circuit
8 V

Power Supply Circuit

CHAPTER IV.

DISASSEMBLY/REASSEMBLY AND LUBRICATION

CHAPTER IV. DISASSEMBLY/REASSEMBLY AND LUBRICATION

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- ■ How to Access the Object Component IV-3
- ■ Disassembly Order Flow IV-4

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1.3 Inner Cover IV-8
1.4 Control Panel ASSY IV-9
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1.9 Separation Roller ASSY IV-21
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1.12 Recorder & Cutter ASSY IV-24
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1.18 Main PCB, NCU PCB and Power Supply PCB IV-29
1.19 Paper Empty Sensor Actuator IV-33

2. LUBRICATION IV-34

1. DISASSEMBLY/REASSEMBLY

■ Safety Precautions

To prevent the creation of secondary problems by mishandling, observe the following precautions during maintenance work.

(1) Always turn off the power before replacing parts or units. When having access to the power supply, be sure to unplug the power cord from the power outlet.

(2) Be careful not to lose screws, washers, or other parts removed for parts replacement.

(3) When using soldering irons and other heat-generating tools, take care not to damage the resin parts such as wires, PCBs, and covers.

(4) Before handling the PCBs, touch a metal portion of the equipment to discharge static electricity; otherwise, the electronic parts may be damaged due to the electricity charged in your body.

(5) When transporting PCBs, be sure to wrap them in conductive sheets such as aluminum foil.

(6) Be sure to reinsert self-tapping screws correctly, if removed.

(7) Tighten screws to the torque values listed on the next page.

(8) When connecting or disconnecting cable connectors, hold the connector bodies not the cables. If the connector has a lock, always slide the connector lock to unlock it.

(9) Before reassembly, apply the specified lubricant to the specified points. (Refer to Section 2 in this chapter.)

(10) After repairs, check not only the repaired portion but also that the connectors and other related portions function properly before operation checks.

Tightening Torque List

Location	Screw type	Q'ty	Tightening torque kgf•cm (N•cm)
Recording paper cover	Taptite, cup B M3x8	2	5 ±2 (49 ±20)
Panel rear cover	Taptite, cup B M3x8	4	5 ±2 (49 ±20)
Control panel PCB	Taptite, cup B M3x8	1*	5 ±2 (49 ±20)
Scanner frame ASSY	Taptite, cup B M3x8	2	5 ±2 (49 ±20)
Drive unit	Taptite, cup S M3x6	3	7 ±2 (69 ±20)
	Taptite, cup S M3x8	1	7 ±2 (69 ±20)
Motor	Taptite, cup S M3x6	1	6 ±2 (59 ±20)
Cutter HP sensor	Taptite, pan B M1.6x8	1	1 ±0.5 (10 ±5)
Recorder & cutter unit	Taptite, cup S M3x8	1	7 ±2 (69 ±20)
Bottom plate	Taptite, cup B M3x8	4	5 ±2 (49 ±20)
Grounding wire	Screw, pan (washer) 4x6DB	1	7 ±2 (69 ±20)

* Provided on the FAX355MC/FAX375MC/FAX-525DT/FAX525MC

■ Preparation

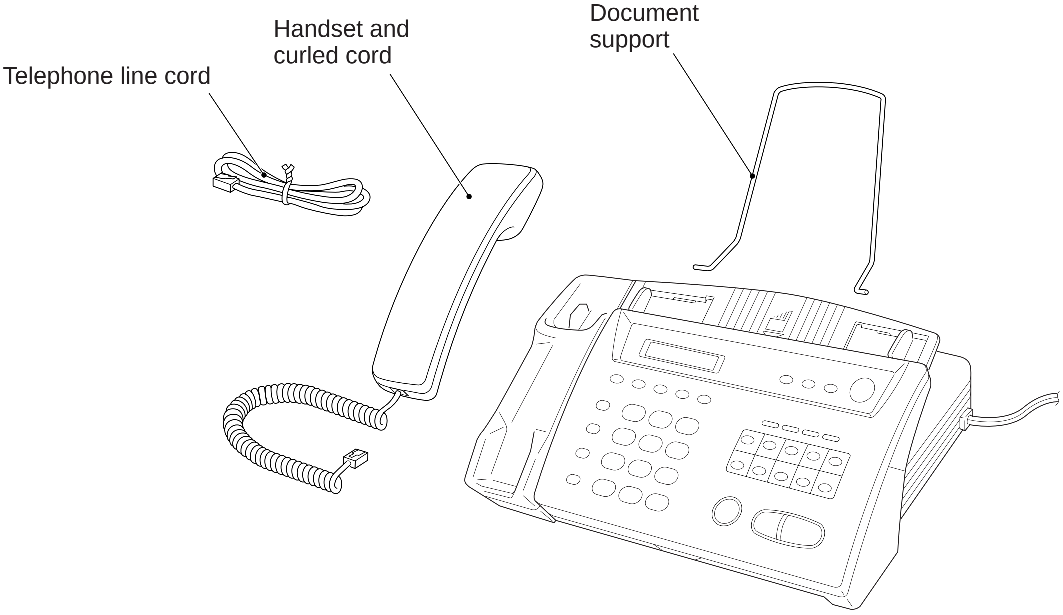
Prior to proceeding to the disassembly procedure,

(1) Unplug

- the modular jack of the telephone line,
- the modular jack of the curled cord (and remove the handset), and
- the modular jack of an external telephone set if mounted. (Not shown below.)

(2) Remove

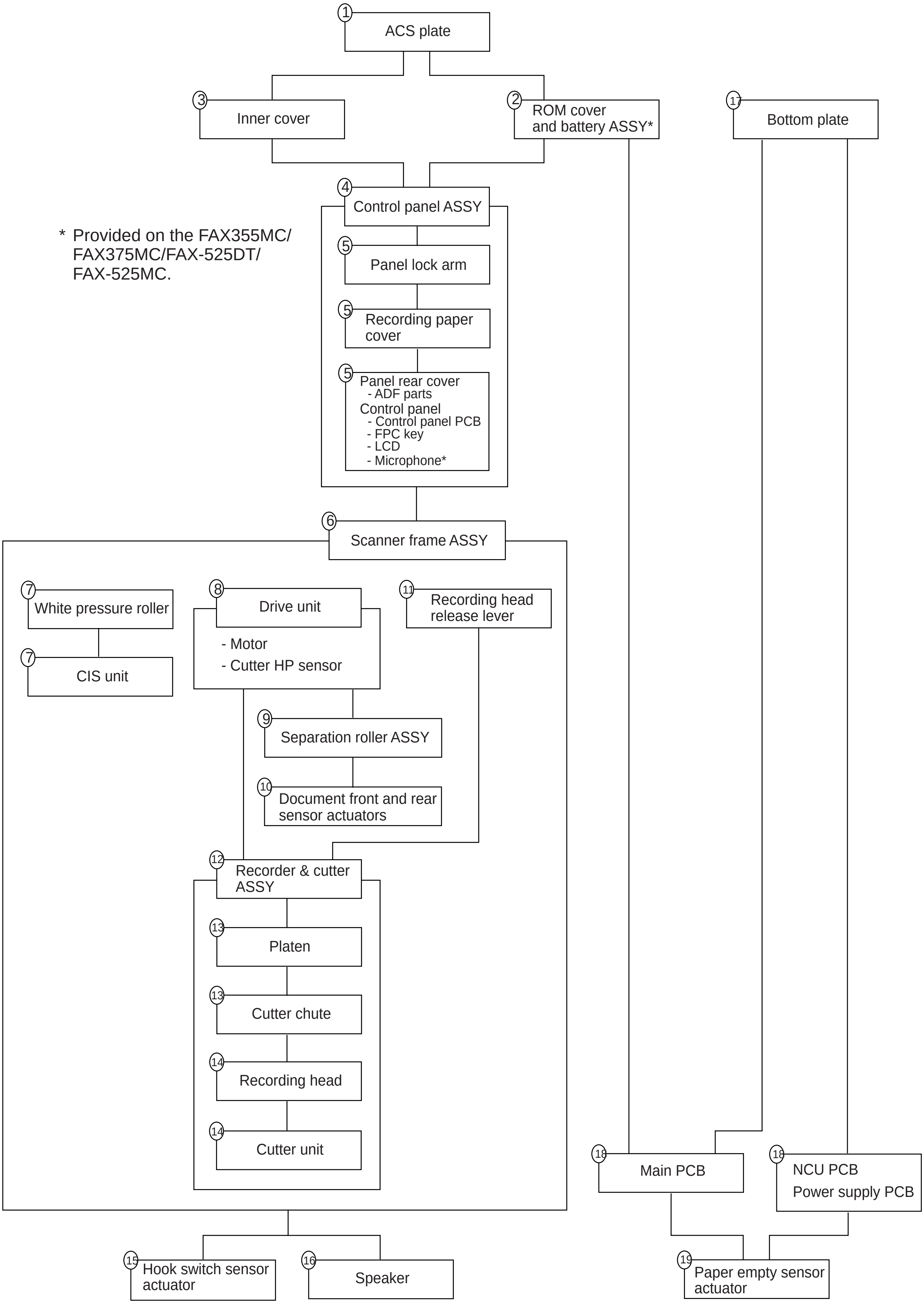
- the document support.



■ How to Access the Object Component

- On the next page is a disassembly order flow which helps you access the object component. To remove the recording head, for example, first find it on the flow and learn its number (⑭ in this case). You should remove parts numbered ① through ④, ⑥, ⑧, ⑪, ⑫, and ⑬ so as to access the recording head.
- Unless otherwise specified, the disassembled parts or components should be reassembled in the reverse order of removal.

■ Disassembly Order Flow

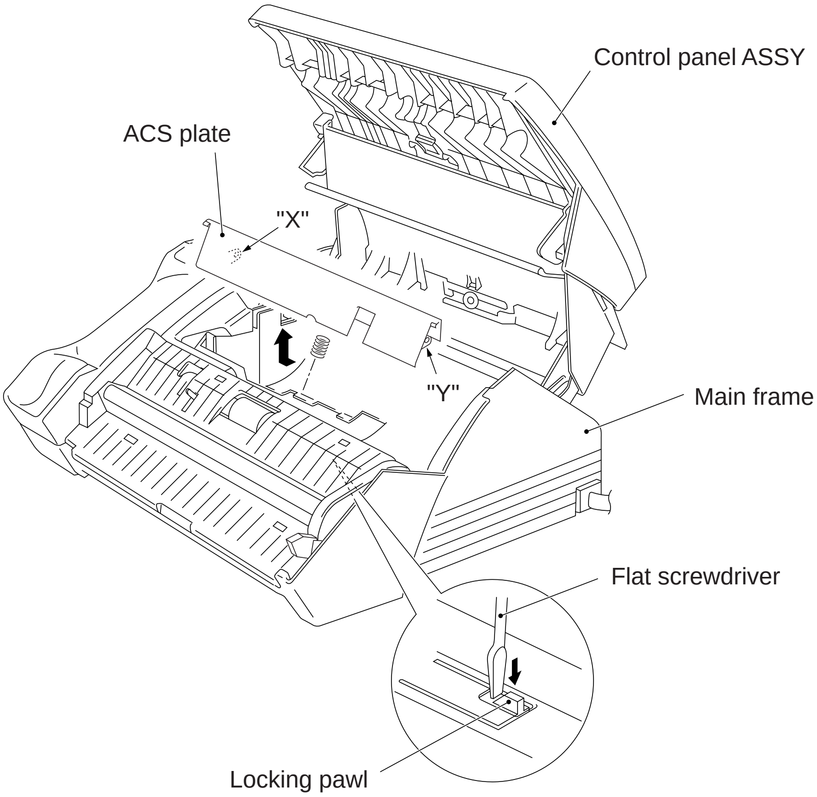

① ACS plate
③ Inner cover
② ROM cover and battery ASSY*
⑰ Bottom plate
④ Control panel ASSY
⑤ Panel lock arm
⑤ Recording paper cover
⑤ Panel rear cover
- ADF parts
Control panel
- Control panel PCB
- FPC key
- LCD
- Microphone*
⑥ Scanner frame ASSY
⑦ White pressure roller
⑦ CIS unit
⑧ Drive unit
- Motor
- Cutter HP sensor
⑪ Recording head release lever
⑨ Separation roller ASSY
⑩ Document front and rear sensor actuators
⑫ Recorder & cutter ASSY
⑬ Platen
⑬ Cutter chute
⑭ Recording head
⑭ Cutter unit
⑱ Main PCB
⑱ NCU PCB
Power supply PCB
⑮ Hook switch sensor actuator
⑯ Speaker
⑲ Paper empty sensor actuator

* Provided on the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC.

1.1 ACS Plate

(1) Open the control panel ASSY.

(2) Push down the locking pawl of the main frame with the tip of a flat screwdriver and move the ACS plate to the left.


Control panel ASSY
ACS plate
"X"
"Y"
Main frame
Flat screwdriver
Locking pawl

■ **Reassembling Notes**

- When installing the ACS plate, first fit hole "X" at the left end of the ACS plate over the left-hand boss provided on the main frame and then fit hole "Y" at the right end over the right-hand boss.

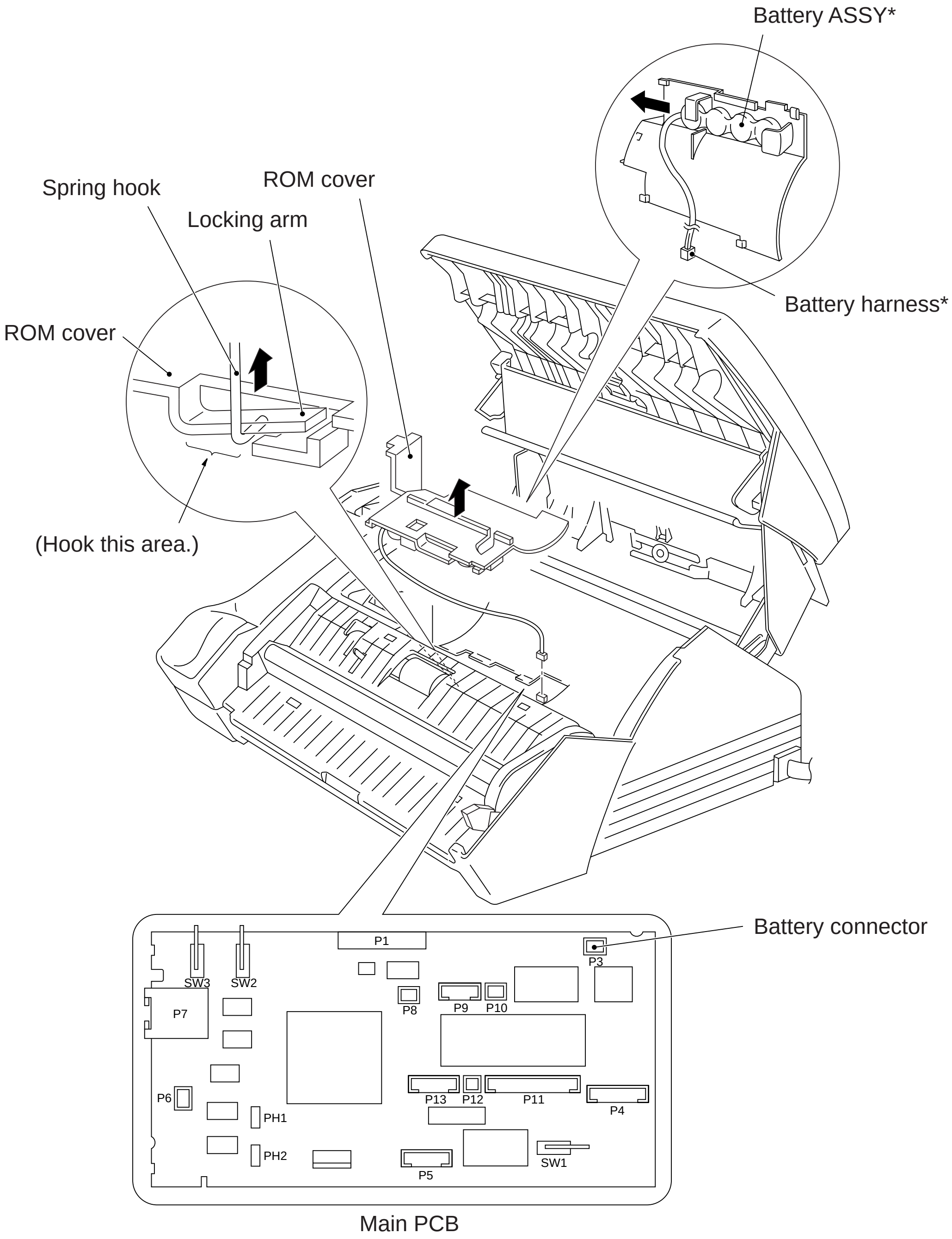
1.2 ROM Cover and Battery ASSY*

(*FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)

(1) Insert the tip of the spring hook at the center or left half of the locking arm as shown below, then lift up the hook to release and move the ROM cover to the right.

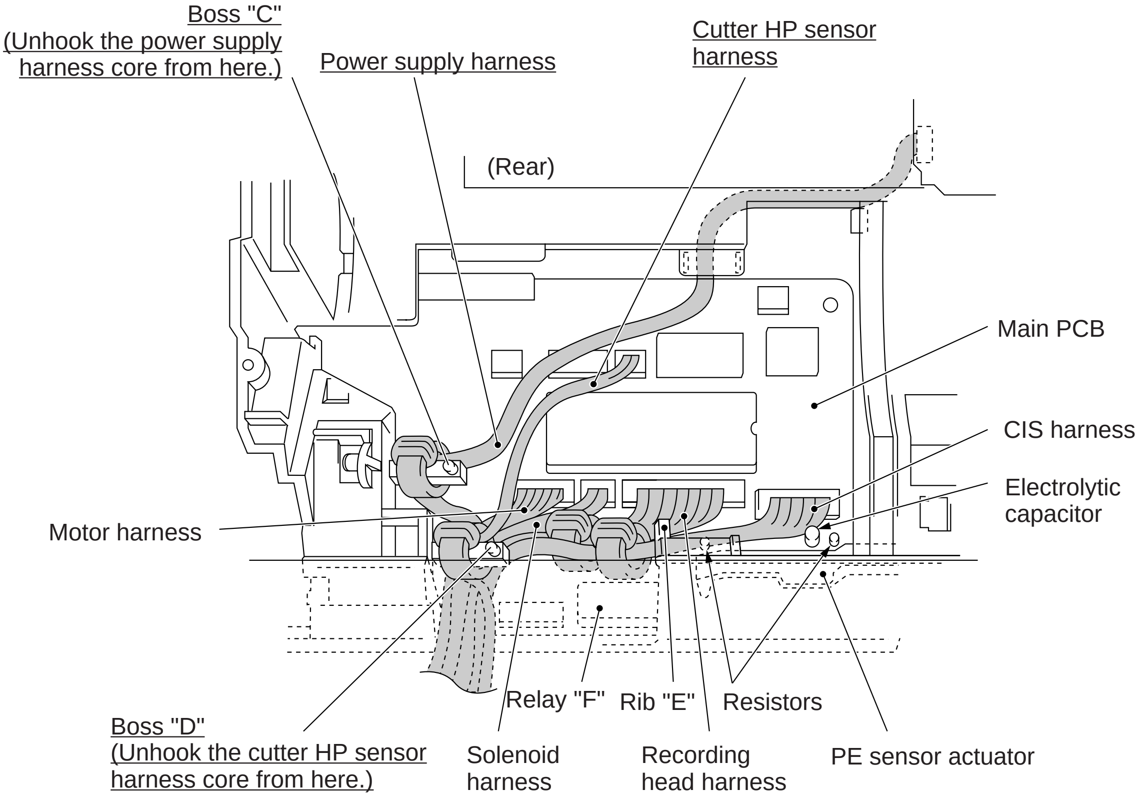
(2) For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: Slightly lift up the ROM cover and disconnect the battery harness from the main PCB, then take out the ROM cover together with the battery ASSY.

(3) For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: Remove the battery ASSY from the ROM cover.


Battery ASSY*
Spring hook
ROM cover
Locking arm
ROM cover
Battery harness*
(Hook this area.)
Battery connector
P1
P3
SW3
SW2
P7
P8
P9
P10
P6
P13
P12
P11
P4
PH1
PH2
P5
SW1
Main PCB

(FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)

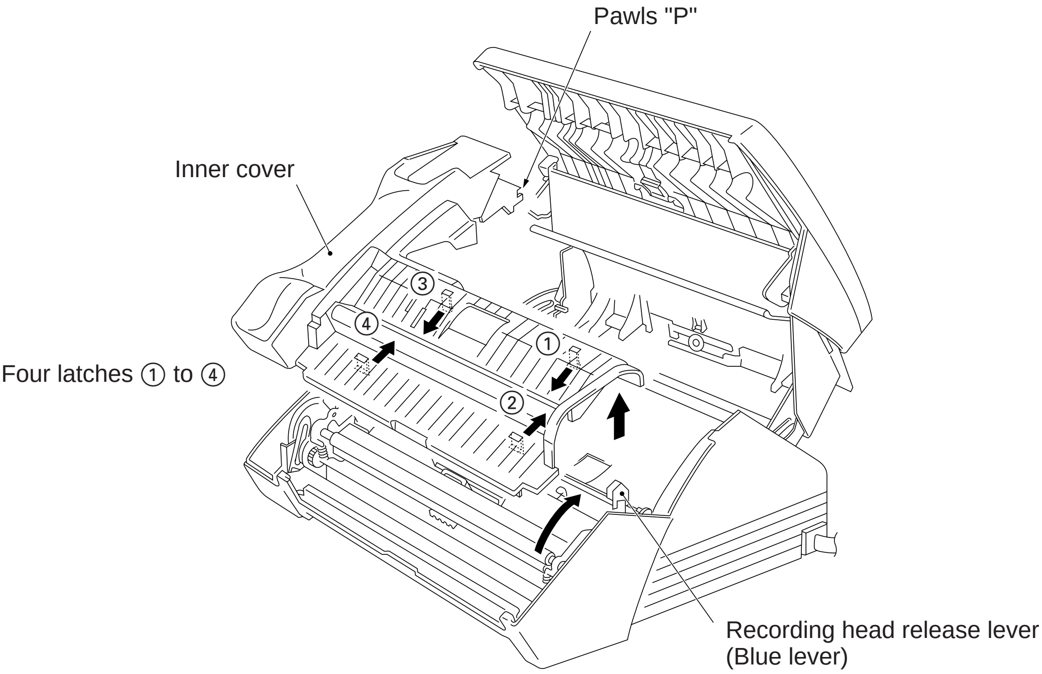
(4) For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: To take out the main PCB or the power supply PCB in Section 1.18, unhook the battery harness core and cutter HP sensor harness core from bosses "C" and "D," respectively, at this stage.


Boss "C"
(Unhook the power supply harness core from here.)
Power supply harness
Cutter HP sensor harness
(Rear)
Main PCB
CIS harness
Electrolytic capacitor
Motor harness
Relay "F"
Rib "E"
Resistors
Boss "D"
(Unhook the cutter HP sensor harness core from here.)
Solenoid harness
Recording head harness
PE sensor actuator

1.3 Inner Cover

(1) Swing the recording head release lever (blue lever) up to the head release position.

(2) While lifting up the inner cover slightly, release the four latches with the tip of a flat screwdriver in the order (① to ④) shown below.



Pawls "P"
Inner cover
③
④
①
②
Four latches ① to ④
Recording head release lever (Blue lever)

■ Reassembling Notes

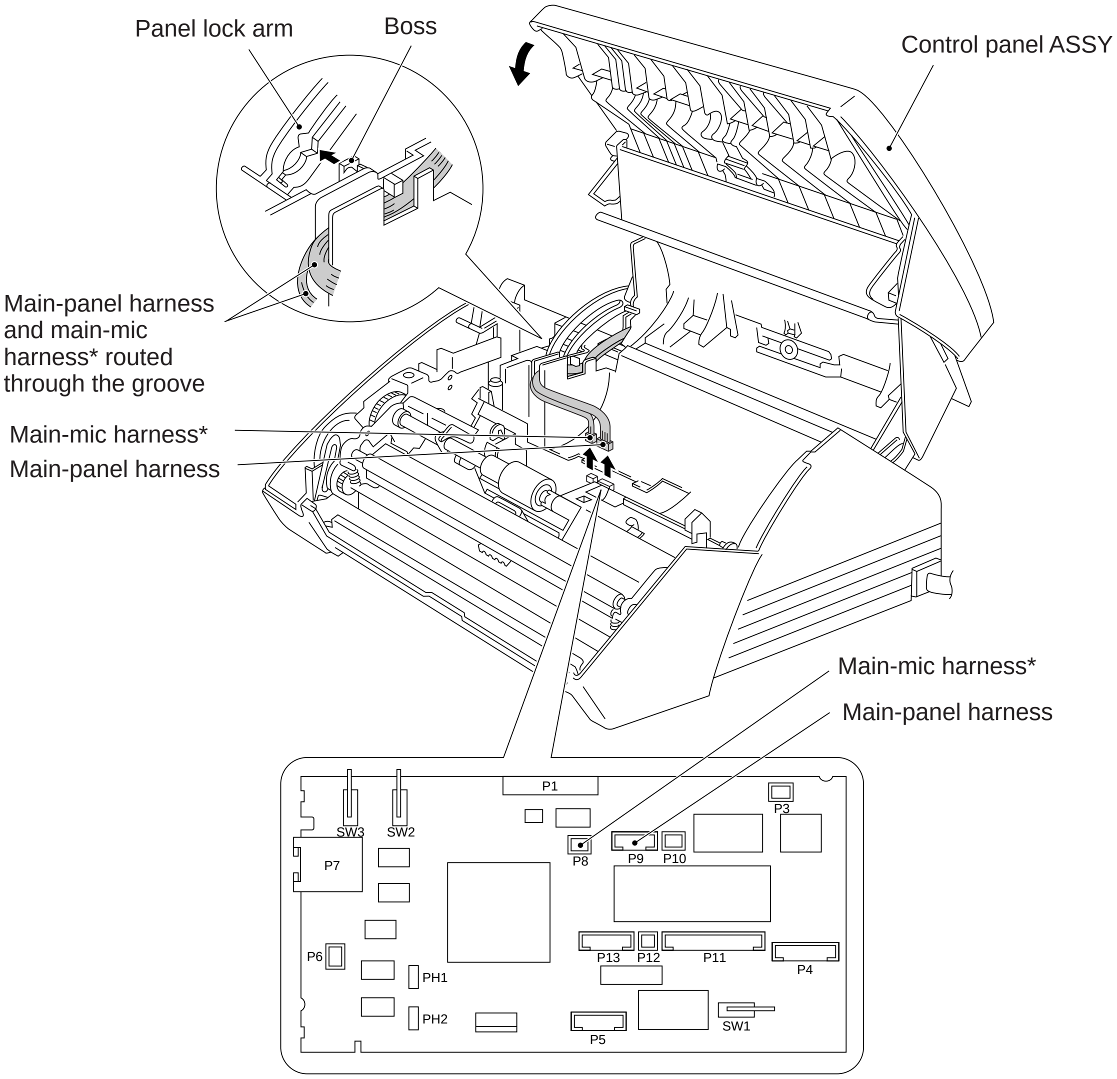
- Before installing the inner cover, swing the recording head release lever up for greater ease.
- Fit the pawls "P" of the inner cover into the square hole provided in the left rear corner of the main frame and then push the inner cover down into place.

1.4 Control Panel ASSY

(1) Disconnect the main-panel harness and the main-mic harness* from the main PCB, and then take out those harnesses from the groove of the main frame.

(2) Slightly bring the control panel ASSY back up towards you so that you can release the panel lock arm from the boss of the main frame. Pull out the panel lock arm to the left and fully open the control panel ASSY.

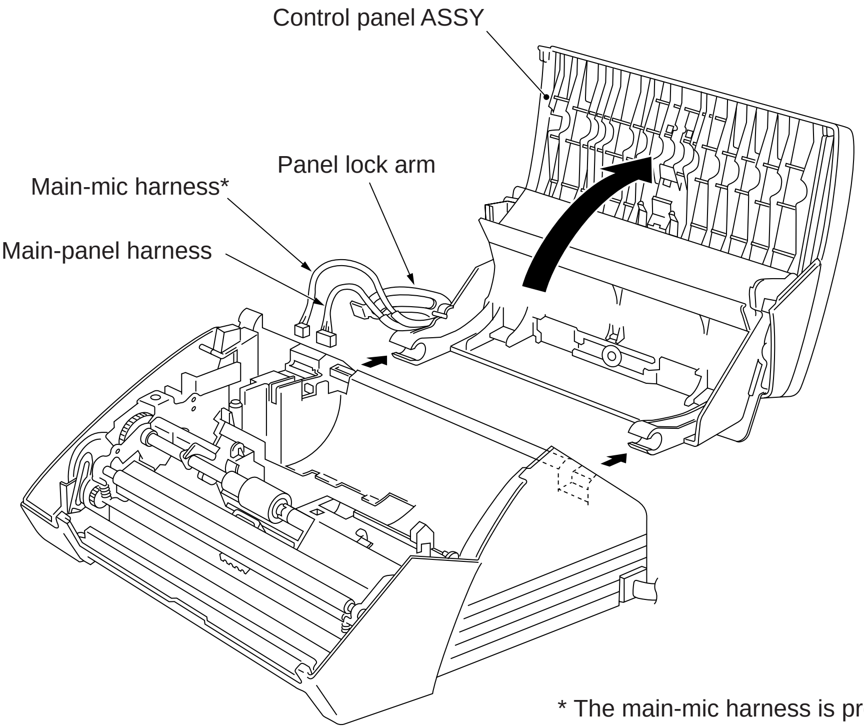
* The main-mic harness is provided on the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC.


Panel lock arm
Boss
Control panel ASSY
Main-panel harness and main-mic harness* routed through the groove
Main-mic harness*
Main-panel harness
Main-mic harness*
Main-panel harness
P1
P3
SW3
SW2
P7
P8
P9
P10
P6
PH1
PH2
P13
P12
P11
P4
P5
SW1

(Main PCB)

(FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)

(3) Push the control panel ASSY back and remove it.


Control panel ASSY
Panel lock arm
Main-mic harness*
Main-panel harness

* The main-mic harness is provided on the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC.

■ Reassembling Notes

- Make sure that the main-panel harness and main-mic harness* are routed through the groove provided on the recording paper cover and are kept in place with the panel lock arm, as illustrated on page IV-13.

1.5 Recording Paper Cover, Panel Rear Cover, Control Panel and Microphone*

(*FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)

(1) Place the control panel ASSY upside down.

(2) Turn the panel lock arm until the cutout provided in it becomes aligned with the boss of the arm support, then pull it out to the left.

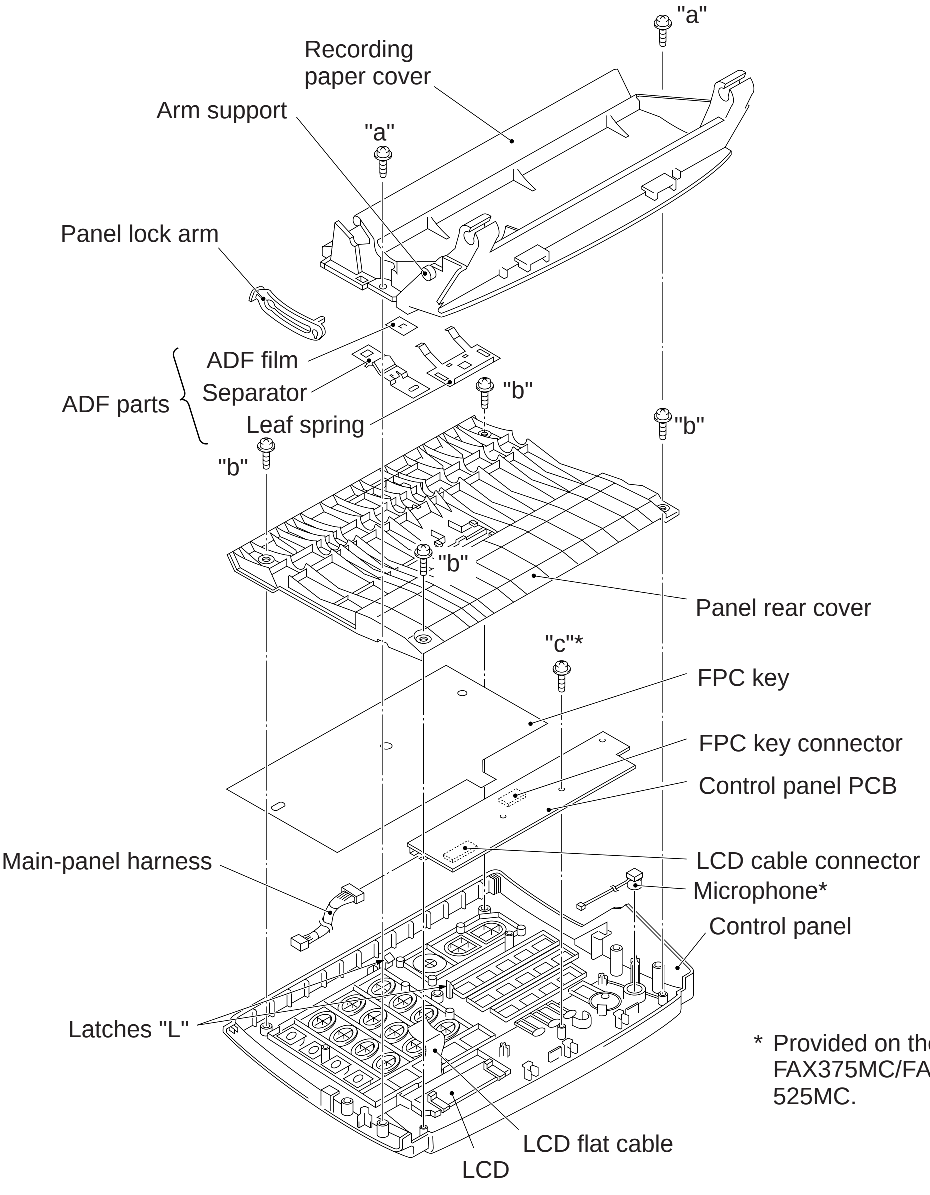
(3) Remove the two screws "a" from the recording paper cover and lift up the rear edge of the cover.

(4) Remove the ADF parts (ADF film, separator and leaf spring), using the spring hook and a flat screwdriver. Once removed, they will become unusable and new parts should have to be put back in.

(5) Remove the four screws "b" from the panel rear cover, then unhook the latches "L" and lift up the cover.

(6) For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: Remove the screw "c" from the control panel PCB.

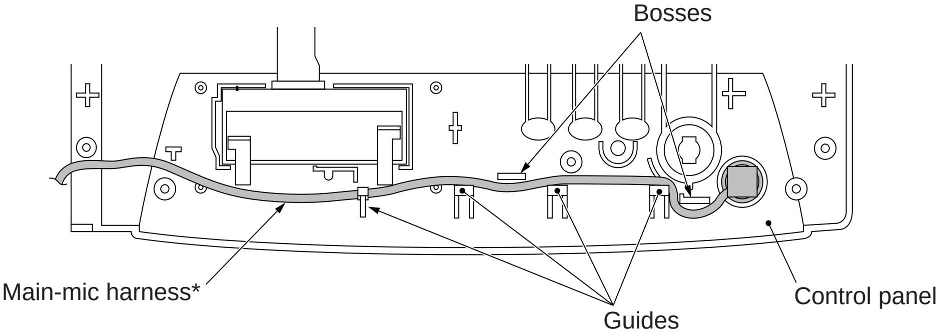
Unlock the LCD cable connector and disconnect the LCD flat cable to take out the control panel PCB and the FPC key.


"a"
Recording paper cover
Arm support
"a"
Panel lock arm
ADF film
ADF parts
Separator
Leaf spring
"b"
"b"
"b"
"b"
Panel rear cover
"c"*
FPC key
FPC key connector
Control panel PCB
Main-panel harness
LCD cable connector
Microphone*
Control panel
Latches "L"
LCD flat cable
LCD

* Provided on the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC.

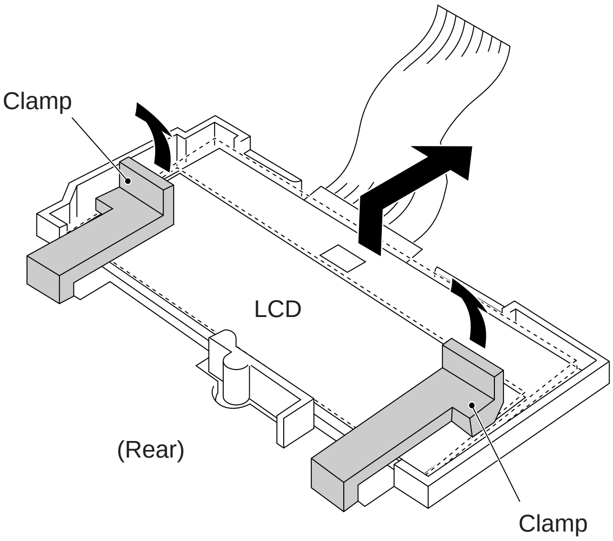
(7) To separate the FPC key from the control panel PCB, unlock the FPC key connector and disconnect the FPC key.

(8) For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: Take out the microphone* and its harness* from the control panel.



* Provided on the FAX355MC/FAX375MC/ FAX-525DT/FAX-525MC.

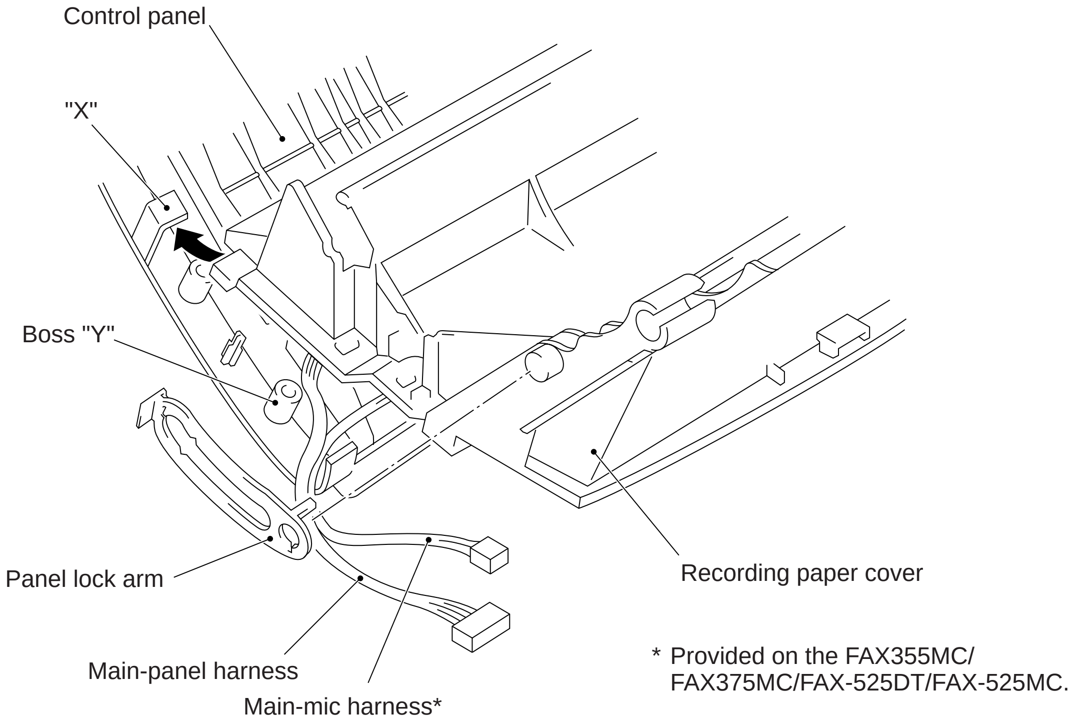
(9) To take out the LCD, remove the control panel PCB and the FPC key in step (6). Pull up the clamps with your fingers and take out the LCD to the front, as shown below.



■ Reassembling Notes

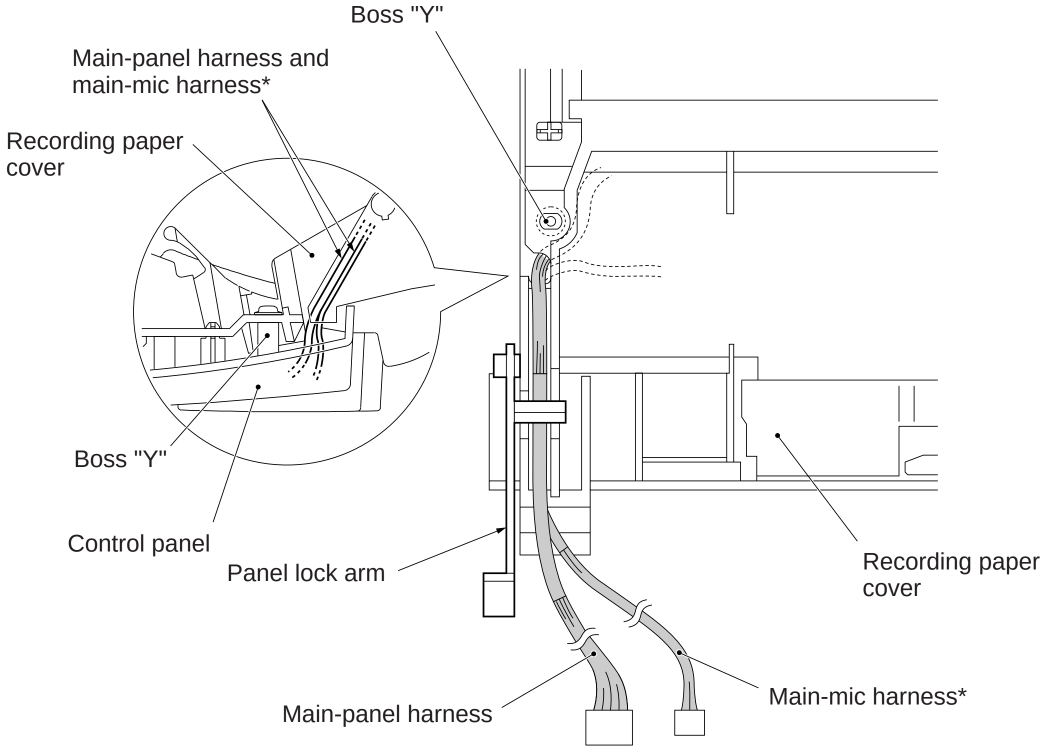
- When installing the LCD, take care not to scratch or damage the cover sheet. Replace it if scratched or damaged.
- A new LCD is covered with a protection sheet. Before installing it, remove the protection sheet.

- When setting the recording paper cover on the control panel, first insert the right and left front corners under sections "X" of the control panel and put the cover into place. Make sure that the main-panel harness and main-mic harness* are routed as shown below.


Control panel
"X"
Boss "Y"
Panel lock arm
Main-panel harness
Main-mic harness*
Recording paper cover

* Provided on the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC.

- After securing the recording paper cover with the screws, be sure to route the main-panel harness and the main-mic harness* through the groove provided on the recording paper cover and then set the panel lock arm to keep those harnesses in place, as illustrated below.


Boss "Y"
Main-panel harness and main-mic harness*
Recording paper cover
Boss "Y"
Control panel
Panel lock arm
Recording paper cover
Main-mic harness*
Main-panel harness

1.6 Scanner Frame ASSY

(1) Be sure to swing the recording head release lever (blue lever) down to the front position.

(2) Remove the two screws.

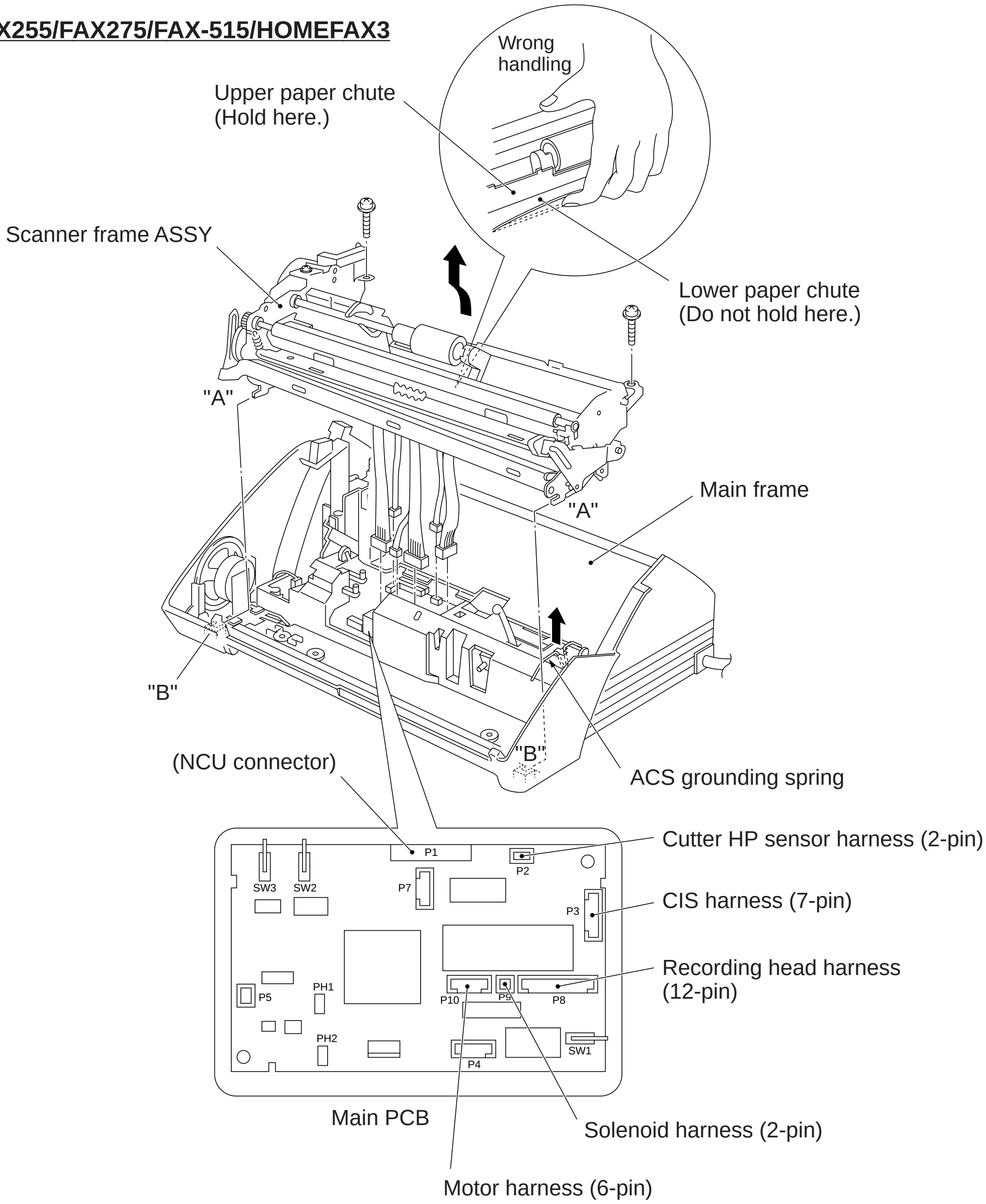
(3) Slightly lift up the rear edge of the scanner frame ASSY and disconnect the following five harnesses from the main PCB:

- Cutter home position (HP) sensor harness (2-pin)
- CIS harness (7-pin)
- Recording head harness (12-pin)
- Solenoid harness (2-pin)
- Motor harness (6-pin)

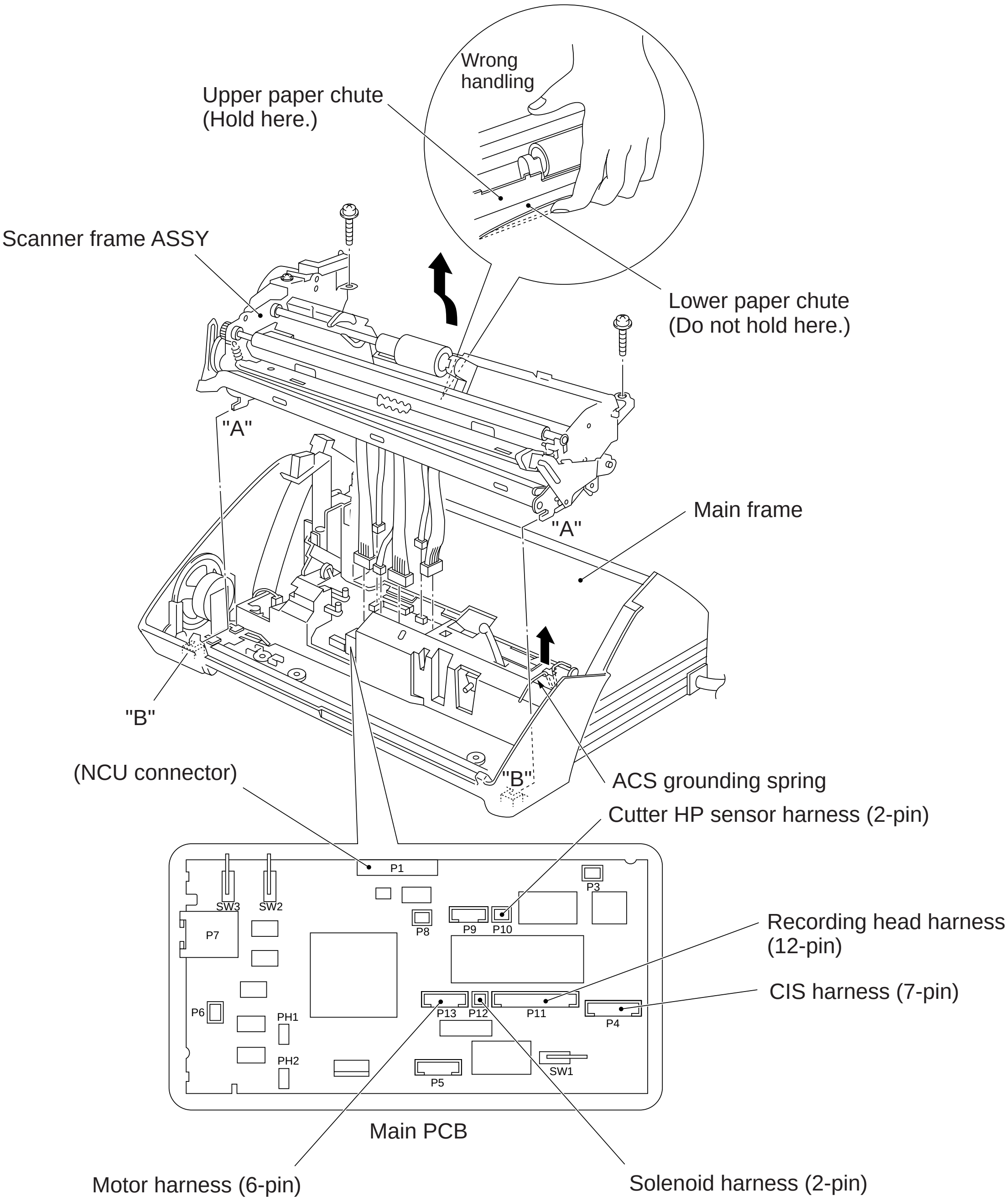
(4) Lift up the scanner frame ASSY from the rear and take it out from the main frame.

NOTE: Do not hold the lower paper chute but the upper paper chute. The lower paper chute is easily deformed.

FAX255/FAX275/FAX-515/HOMEFAX3


Wrong handling
Upper paper chute (Hold here.)
Scanner frame ASSY
Lower paper chute (Do not hold here.)
"A"
"A"
Main frame
"B"
"B"
(NCU connector)
ACS grounding spring
P1
P2
SW3
SW2
P7
P3
P5
PH1
P10
P9
P8
PH2
P4
SW1
Cutter HP sensor harness (2-pin)
CIS harness (7-pin)
Recording head harness (12-pin)
Main PCB
Solenoid harness (2-pin)
Motor harness (6-pin)

FAX355MC/FAX375MC/FAX-525DT/FAX-525MC

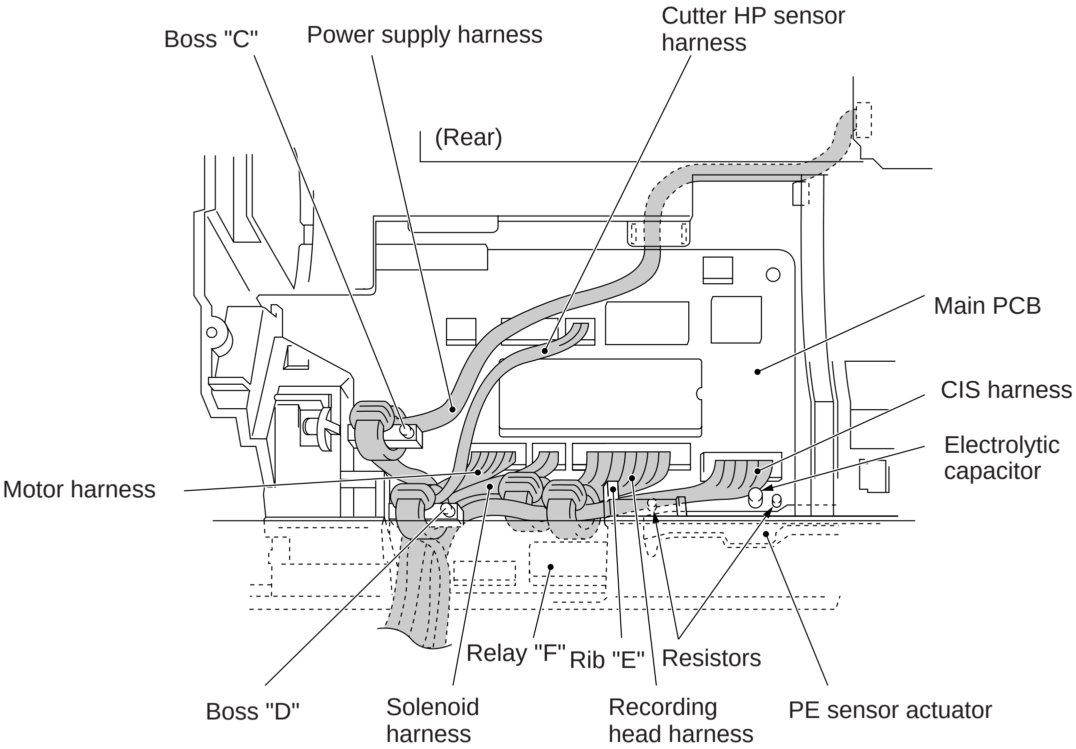

Wrong handling
Upper paper chute (Hold here.)
Scanner frame ASSY
Lower paper chute (Do not hold here.)
"A"
"A"
Main frame
"B"
"B"
(NCU connector)
ACS grounding spring
Cutter HP sensor harness (2-pin)
P1
P3
SW3
SW2
P7
P8
P9
P10
Recording head harness (12-pin)
CIS harness (7-pin)
P6
PH1
P13
P12
P11
P4
PH2
P5
SW1
Main PCB
Motor harness (6-pin)
Solenoid harness (2-pin)

(5) Lift up the ACS grounding spring.

■ Reassembling Notes

- Before putting the scanner frame ASSY back onto the main frame, be sure to set the ACS grounding spring as illustrated on the previous page.
- Make sure that tabs "A" of the scanner frame ASSY are fitted in cutouts "B" provided in the main frame. (See the illustration on the previous page.)
- For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: After putting the scanner frame ASSY back onto the main frame, route the harnesses and arrange the cores as follows, referring to the illustration below.
  - Hook the power supply harness core on boss "C."
  - Check that the cutter HP sensor harness runs through a core, and then hook the core on boss "D."
  - Push the CIS harness core and the recording head harness core into position, to the left of rib "E" and behind relay "F."
  - Route all these harnesses under boss "D."

  If any of these harnesses and cores are out of the specified position, the scanner frame ASSY or ROM cover may not be put back into place.
- For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: After connecting these harnesses, check that neither the electrolytic capacitor nor resistors are tilted towards the PE sensor actuator. If tilted, they may interfere with normal operation of the sensor actuator.

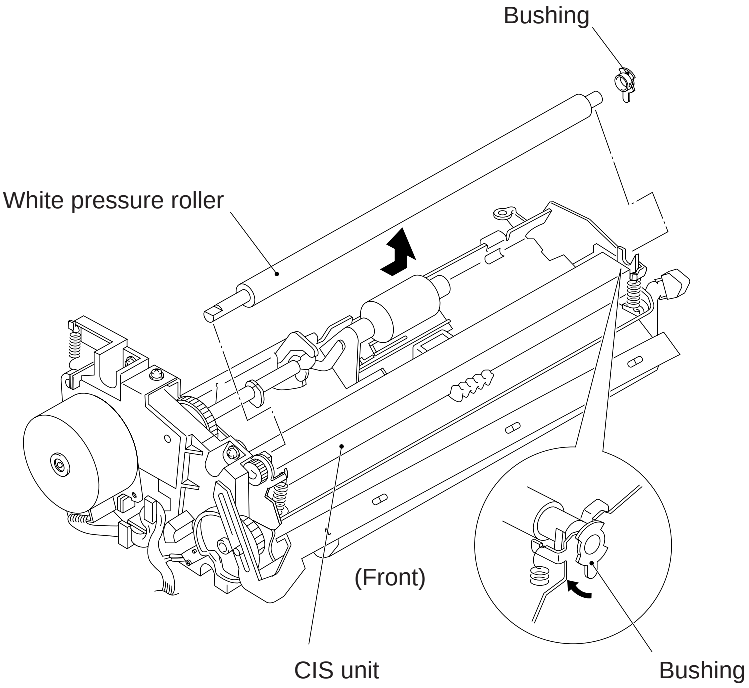

Boss "C"
Power supply harness
Cutter HP sensor harness
(Rear)
Main PCB
CIS harness
Electrolytic capacitor
Motor harness
Relay "F"
Rib "E"
Resistors
Boss "D"
Solenoid harness
Recording head harness
PE sensor actuator

(FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)

1.7 White Pressure Roller and CIS Unit

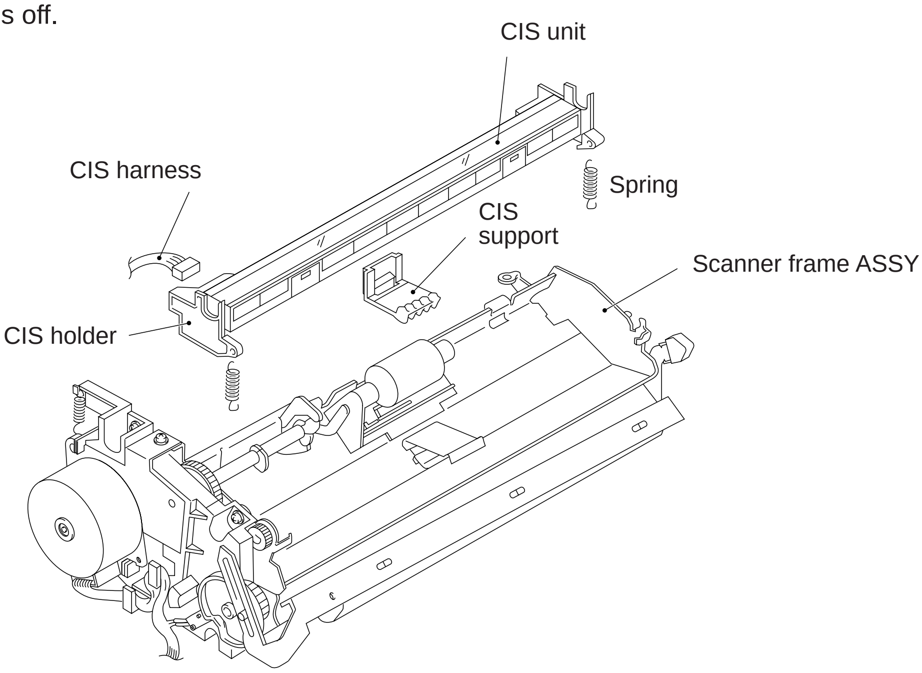
(1) Turn the bushing of the white pressure roller clockwise approx. 90˚ and pull it out to the right.

(2) Lift up the left end of the white pressure roller and push it to the right.


Bushing
White pressure roller
(Front)
CIS unit
Bushing

(3) Unhook the two springs, using the spring hook.

(4) Slightly lift up the CIS unit and disconnect the CIS harness. The CIS support also comes off.


CIS unit
CIS harness
Spring
CIS support
Scanner frame ASSY
CIS holder

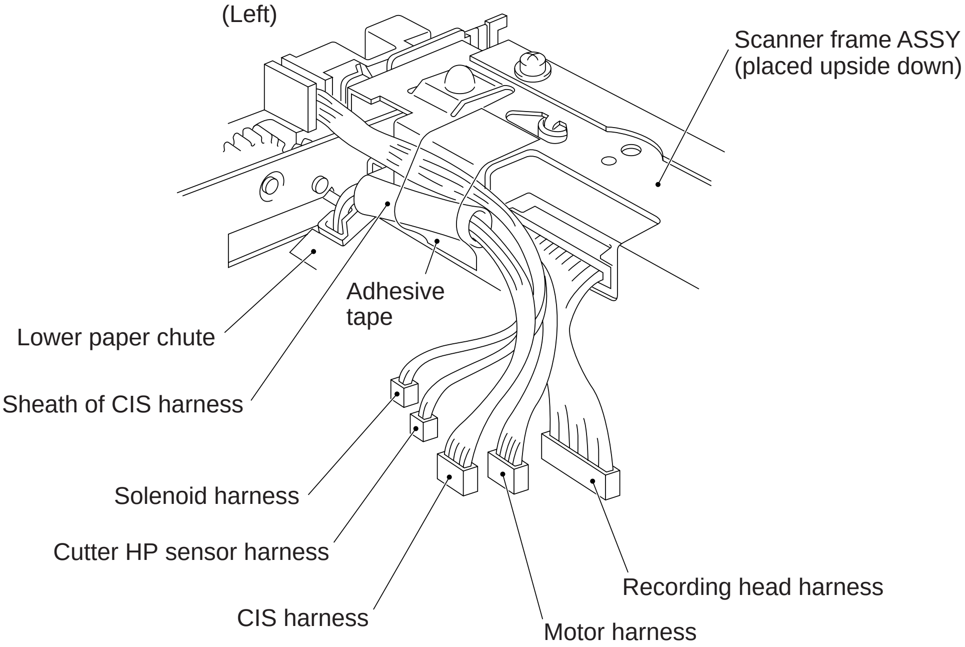
■ **Reassembling Notes**

- Before putting the white pressure roller back into place, wipe it with an alcohol-dampened cloth.
- When replacing the CIS unit, remove the CIS holders (secured with screws) from the old CIS unit and install them to a new CIS unit.

1.8 Drive Unit (Main Motor and Cutter HP Sensor)

(1) Turn the scanner frame ASSY upside down.

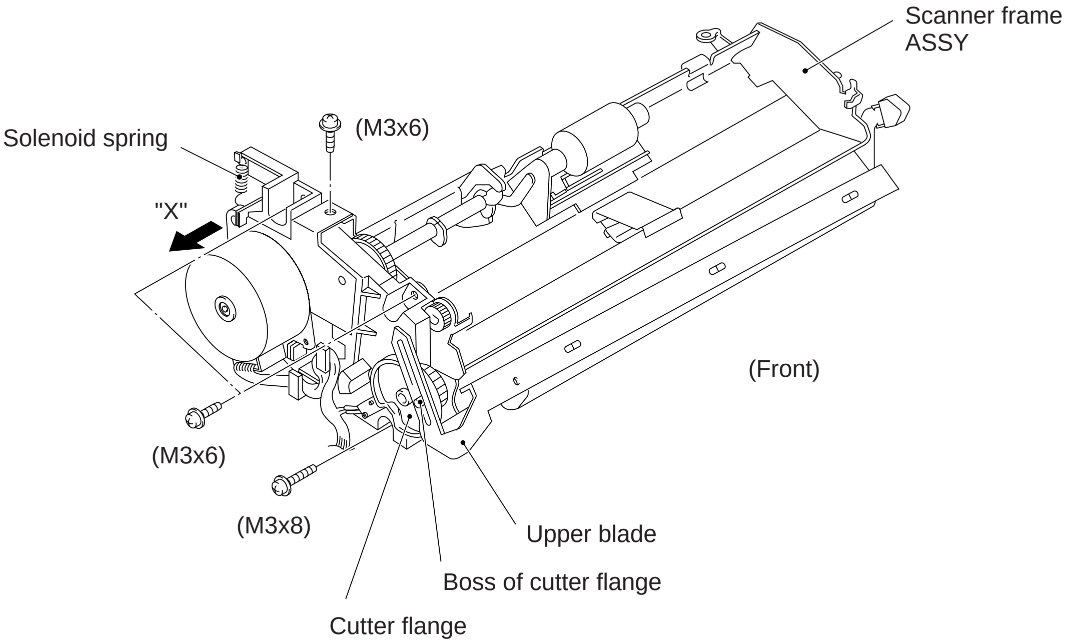
(2) Remove the adhesive tape to release the CIS harness, motor harness, solenoid harness, and cutter HP sensor harness.


(Left)
Scanner frame ASSY
(placed upside down)
Adhesive
tape
Lower paper chute
Sheath of CIS harness
Solenoid harness
Cutter HP sensor harness
CIS harness
Recording head harness
Motor harness

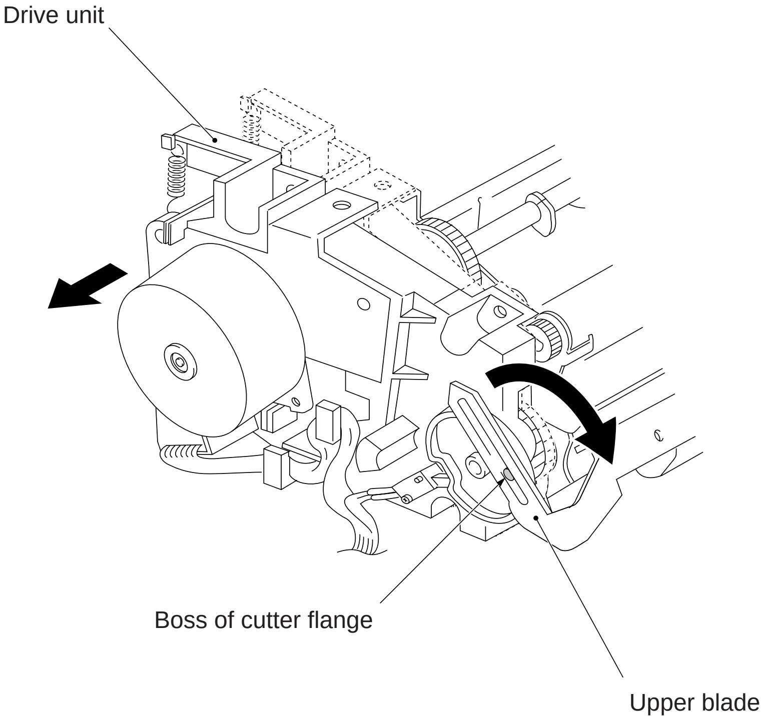
(3) Place the scanner frame ASSY rightside up.

(4) Remove the four screws.

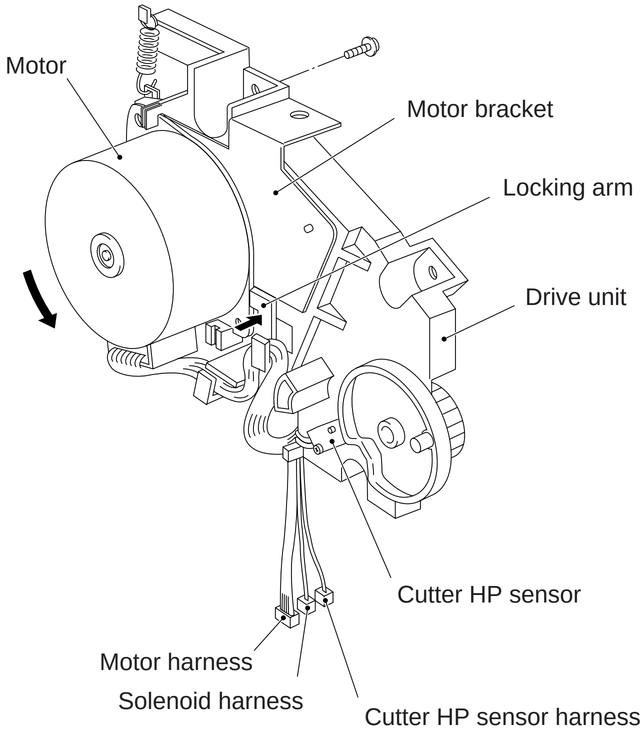
(5) Fully turn the cutter flange clockwise. Hold the drive unit with your left hand and then slightly separate its rear edge from the scanner frame ASSY in the direction of arrow "X" in order to release the boss of the cutter flange from the upper blade.


Scanner frame
ASSY
Solenoid spring
(M3x6)
"X"
(Front)
(M3x6)
(M3x8)
Upper blade
Boss of cutter flange
Cutter flange

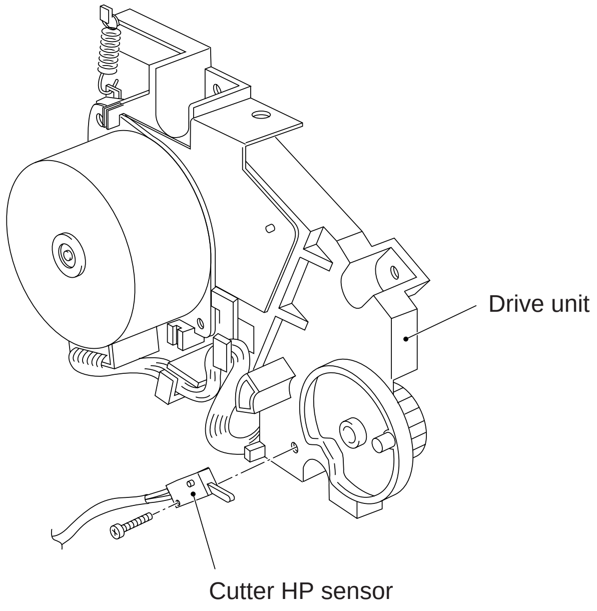
(6) After releasing the boss of the cutter flange from the upper blade, turn the upper blade clockwise as shown below and take the drive unit off from the scanner frame ASSY.


Drive unit
Boss of cutter flange
Upper blade

(7) To take out the motor, remove the screw, lightly press the locking arm and turn the motor counterclockwise. The motor bracket also comes off.

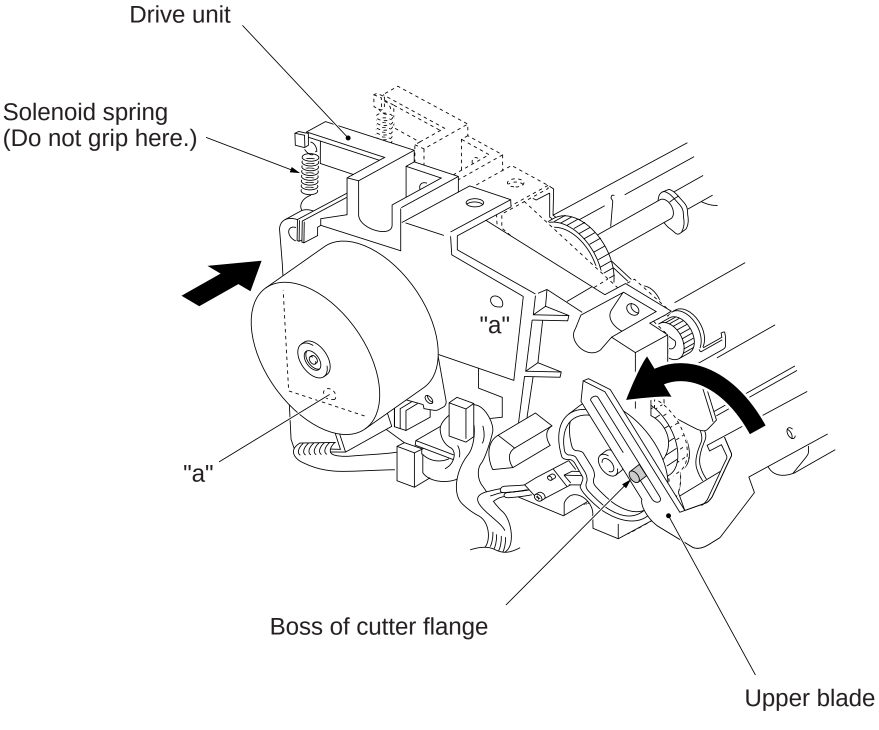

Motor
Motor bracket
Locking arm
Drive unit
Cutter HP sensor
Motor harness
Solenoid harness
Cutter HP sensor harness

(8) To take out the cutter HP sensor, remove the screw.


Drive unit
Cutter HP sensor

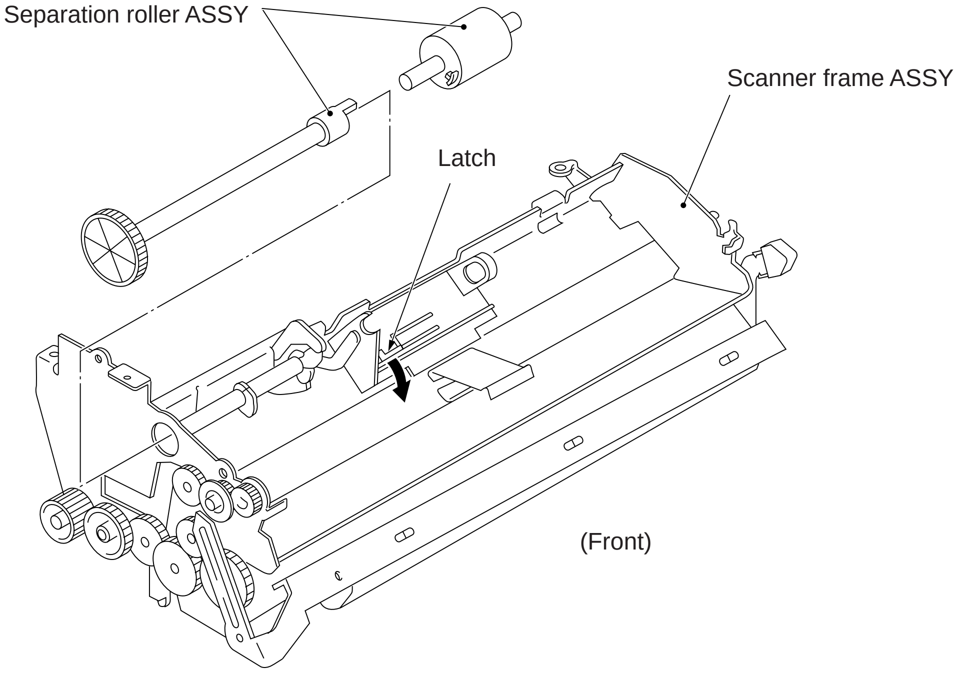
Reassembling Notes

- When installing the motor bracket, fit the two holes "a" over the positioning bosses provided on the drive unit.
- Make sure that the locking arm clamps the motor.
- When installing the drive unit to the scanner frame ASSY, hold the resin part of the drive unit, taking care not to grip the solenoid spring. Fully turn the cutter flange clockwise and turn the upper blade to the angle shown below, and then fit the boss of the cutter flange into the hole of the upper blade.


Drive unit
Solenoid spring
(Do not grip here.)
"a"
"a"
Boss of cutter flange
Upper blade

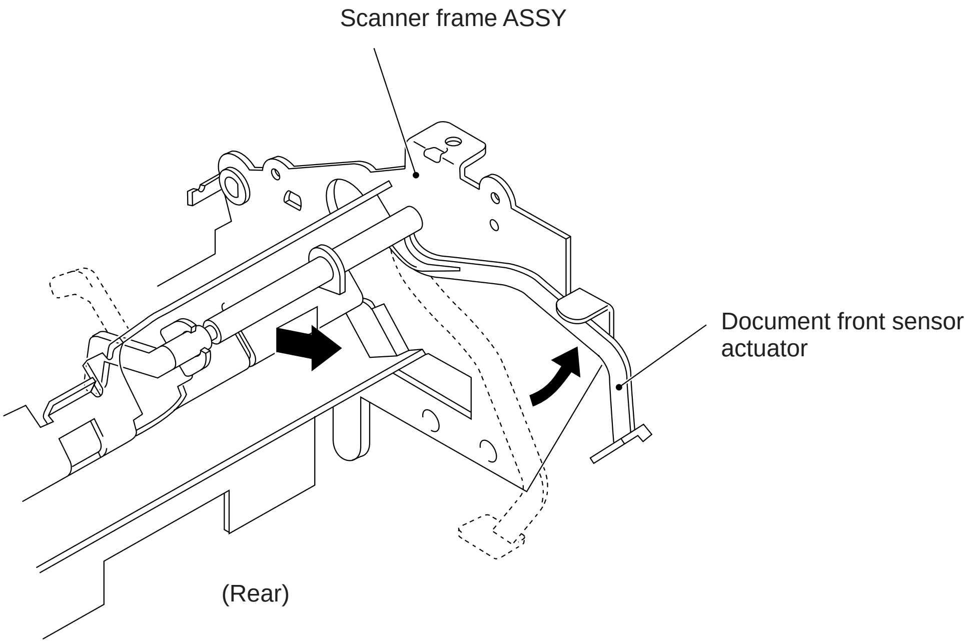
1.9 Separation Roller ASSY

(1) Push down the latch with the tip of a flat screwdriver and move the separation roller ASSY to the left. Then remove the roller to the right and pull out the roller shaft to the left.

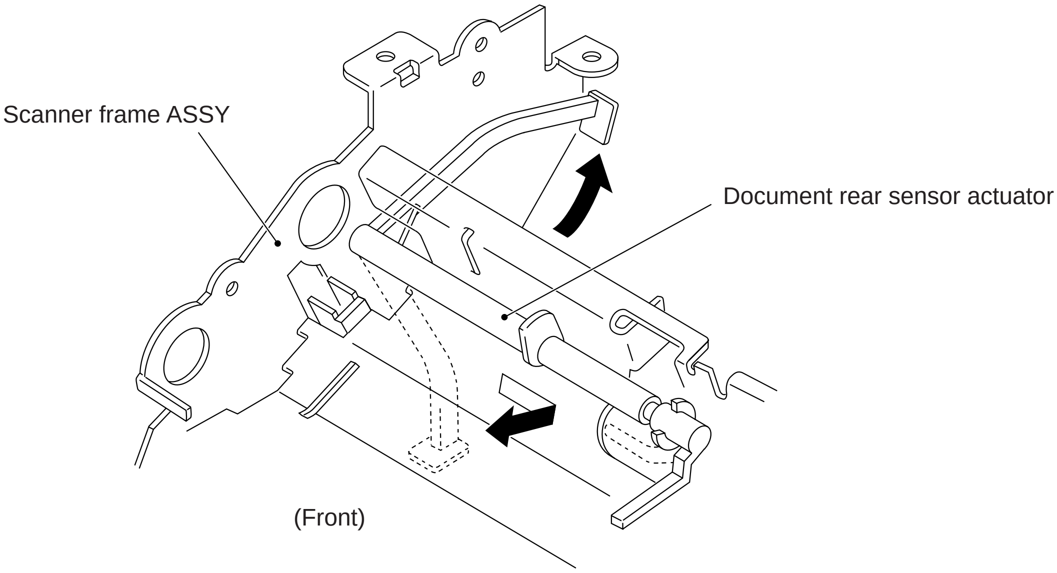

Separation roller ASSY
Scanner frame ASSY
Latch
(Front)

1.10 Document Front and Rear Sensor Actuators

(1) Turn the document front sensor actuator as shown below and move it to the left (viewed from the rear).


Scanner frame ASSY
Document front sensor actuator
(Rear)

(2) Turn the document rear sensor actuator as shown below and move it to the right (viewed from the front).

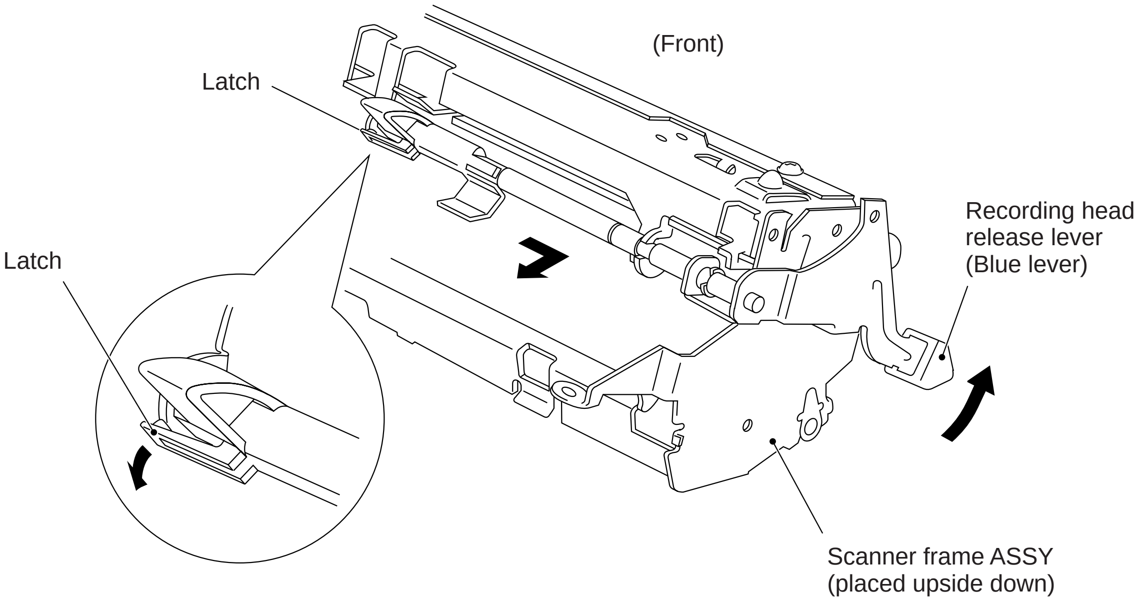

Scanner frame ASSY
Document rear sensor actuator
(Front)

1.11 Recording Head Release Lever

(1) Place the scanner frame ASSY upside down.

(2) Swing the recording head release lever as shown below.

(3) Release the latch and remove the recording head release lever.

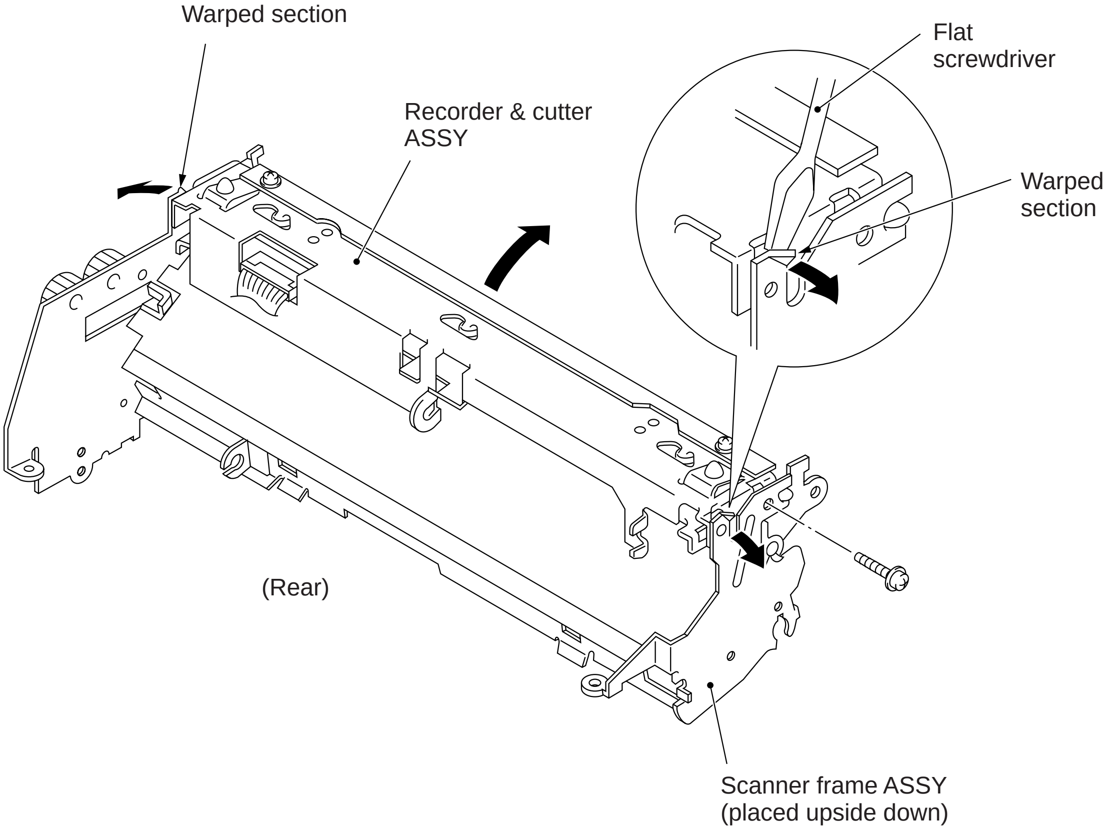

(Front)
Latch
Latch
Recording head release lever (Blue lever)
Scanner frame ASSY (placed upside down)

1.12 Recorder & Cutter ASSY

(1) Place the scanner frame ASSY upside down.

(2) Remove the screw.

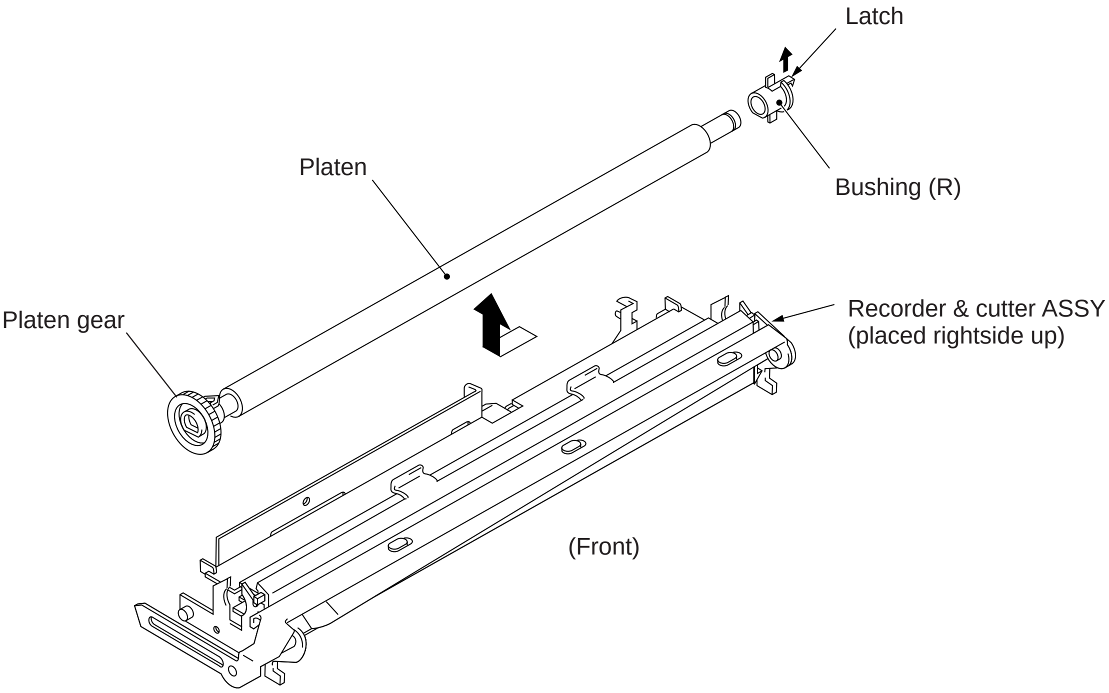
(3) Press the warped sections of the scanner frame ASSY outwards at both sides with the tip of a flat screwdriver and take out the recorder & cutter ASSY.


Warped section
Flat screwdriver
Recorder & cutter ASSY
Warped section
(Rear)
Scanner frame ASSY (placed upside down)

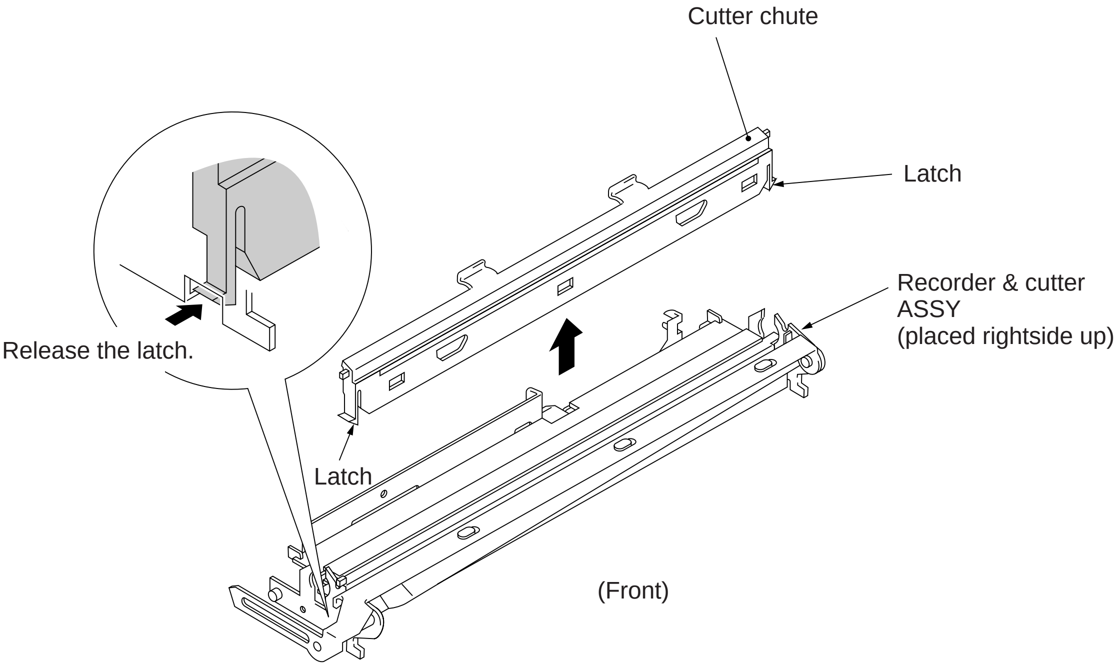
1.13 Platen and Cutter Chute

(1) Release the latch of the bushing (R) and pull out the bushing to the right.

(2) Pull out the platen gear to the left together with the platen and then lift up.


Latch
Platen
Bushing (R)
Platen gear
Recorder & cutter ASSY
(placed rightside up)
(Front)

(3) Press the two latches of the cutter chute inwards to release and then lift up the cutter chute straight, taking care not to let it catch on other parts.

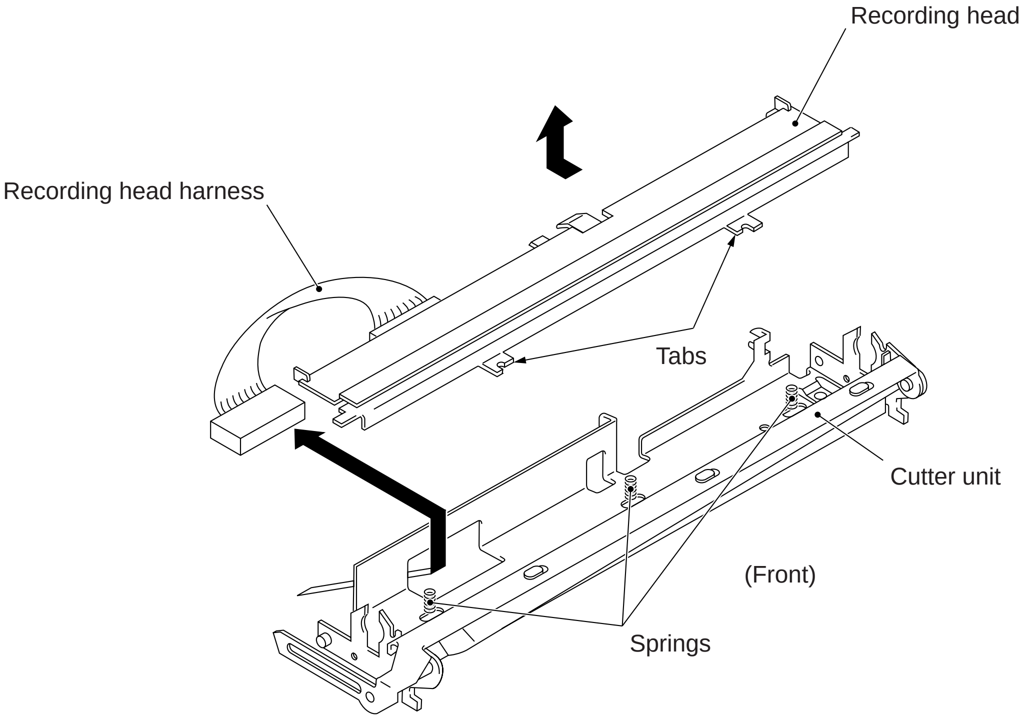

Cutter chute
Latch
Recorder & cutter
ASSY
(placed rightside up)
Release the latch.
Latch
(Front)

1.14 Recording Head and Cutter Unit

(1) Push down the front edge of the recording head and move it back to the rear to release the tabs from the cutter unit.

NOTE: Take care not to lose the three springs placed under the recording head.

NOTE: Never disassemble the cutter unit.



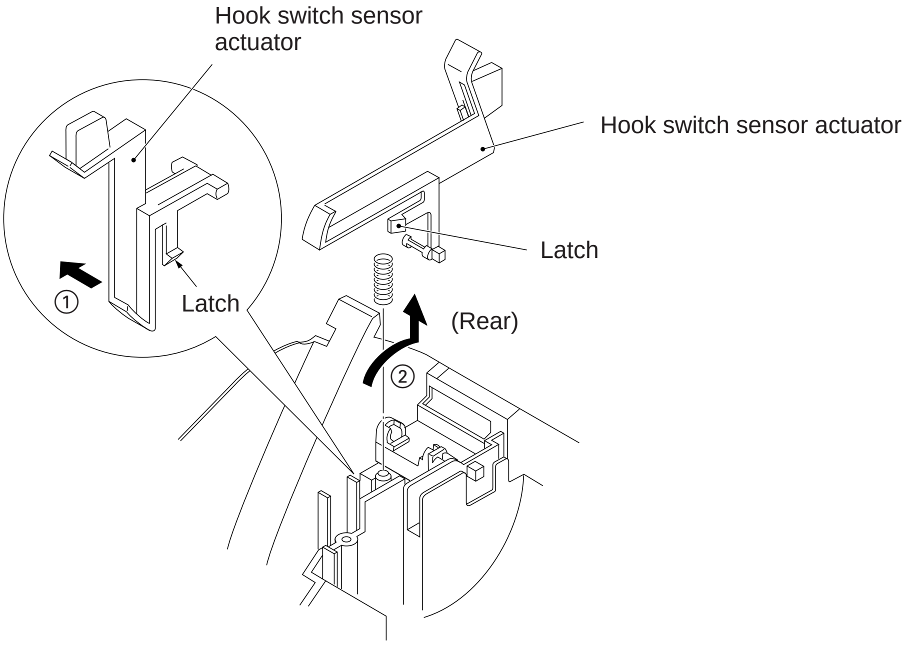
■ Reassembling Notes

- When installing the recording head, make sure that the three springs are set on the bosses of the cutter unit.
- Make sure the recording head harness goes through the cutout provided in the cutter unit.
- It is recommended that you install the platen right after putting the recording head back into place. If not secured by the platen, the recording head could easily come out with any impact.

1.15 Hook Switch Sensor Actuator

(1) Press the lower section of the hook switch sensor actuator to the left to release the latch from the main frame, then swing it upwards.

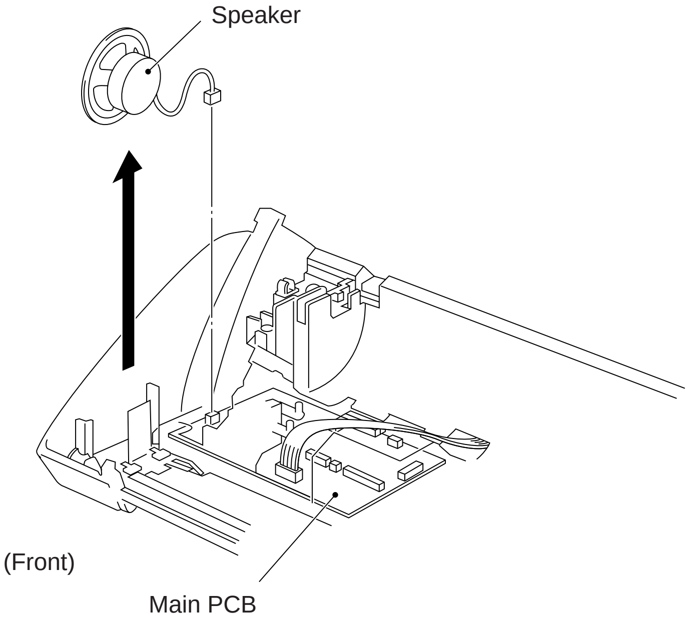
(2) Remove the spring.


Hook switch sensor actuator
Hook switch sensor actuator
Latch
①
Latch
(Rear)
②

1.16 Speaker

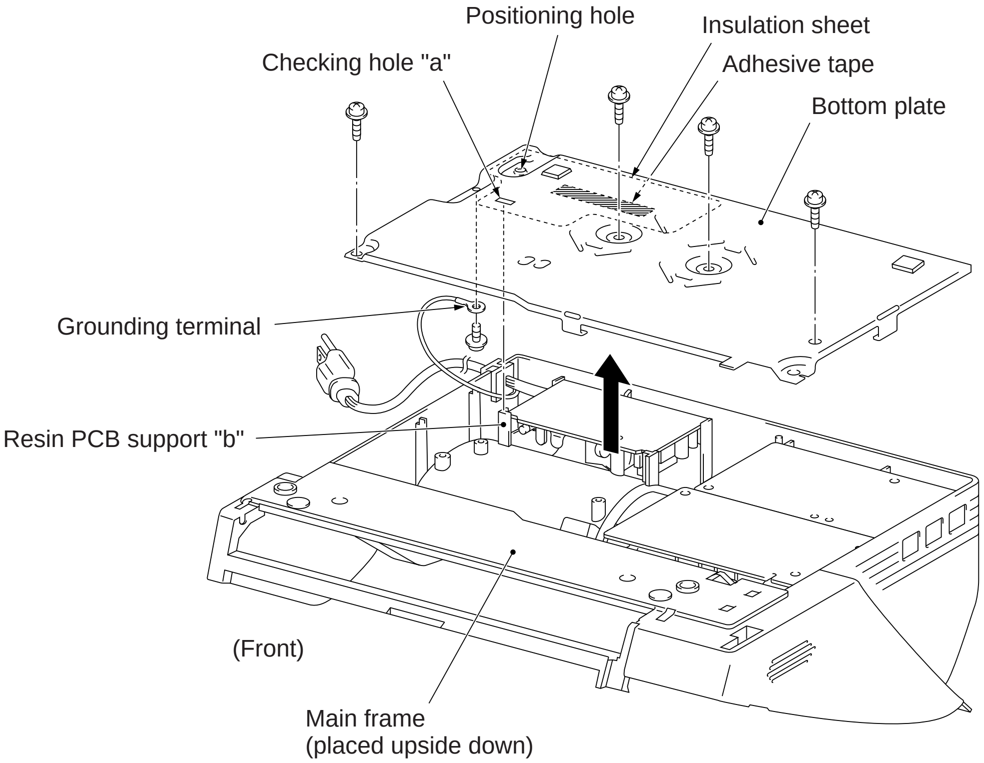
(1) Disconnect the speaker harness from the main PCB.

(2) Lift up the speaker.


Speaker
(Front)
Main PCB

1.17 Bottom Plate

(1) Place the main frame upside down.
(2) Remove the four screws.
(3) Slightly lift up the bottom plate and disconnect the grounding terminal.
(4) Remove the insulation sheet from the bottom plate.


Positioning hole
Insulation sheet
Checking hole "a"
Adhesive tape
Bottom plate
Grounding terminal
Resin PCB support "b"
(Front)
Main frame
(placed upside down)

■ Reassembling Notes

- Once removed, the insulation sheet will become unusable and a new one should have to be put back in. When attaching it to the bottom plate, align the rear edge with that of the bottom plate and fit the positioning hole with that provided in the bottom plate, as shown above.
- Before putting the bottom plate back into place, make sure that the power supply PCB is completely fitted in the resin PCB supports without any gap.

  After installing the bottom plate, check that resin PCB support "b" of the main frame appears from the checking hole "a" provided in the bottom plate and that the bottom plate is fitted in the main frame without any gap.

  If the power supply PCB comes into contact with the bottom plate, a short circuit may occur.

1.18 Main PCB, NCU PCB and Power Supply PCB

If you have already removed the scanner frame ASSY and speaker, slightly lift up the main PCB together with the NCU PCB and then disconnect the power supply harness from the main PCB. If the scanner frame ASSY and speaker are not yet removed, follow the steps below:

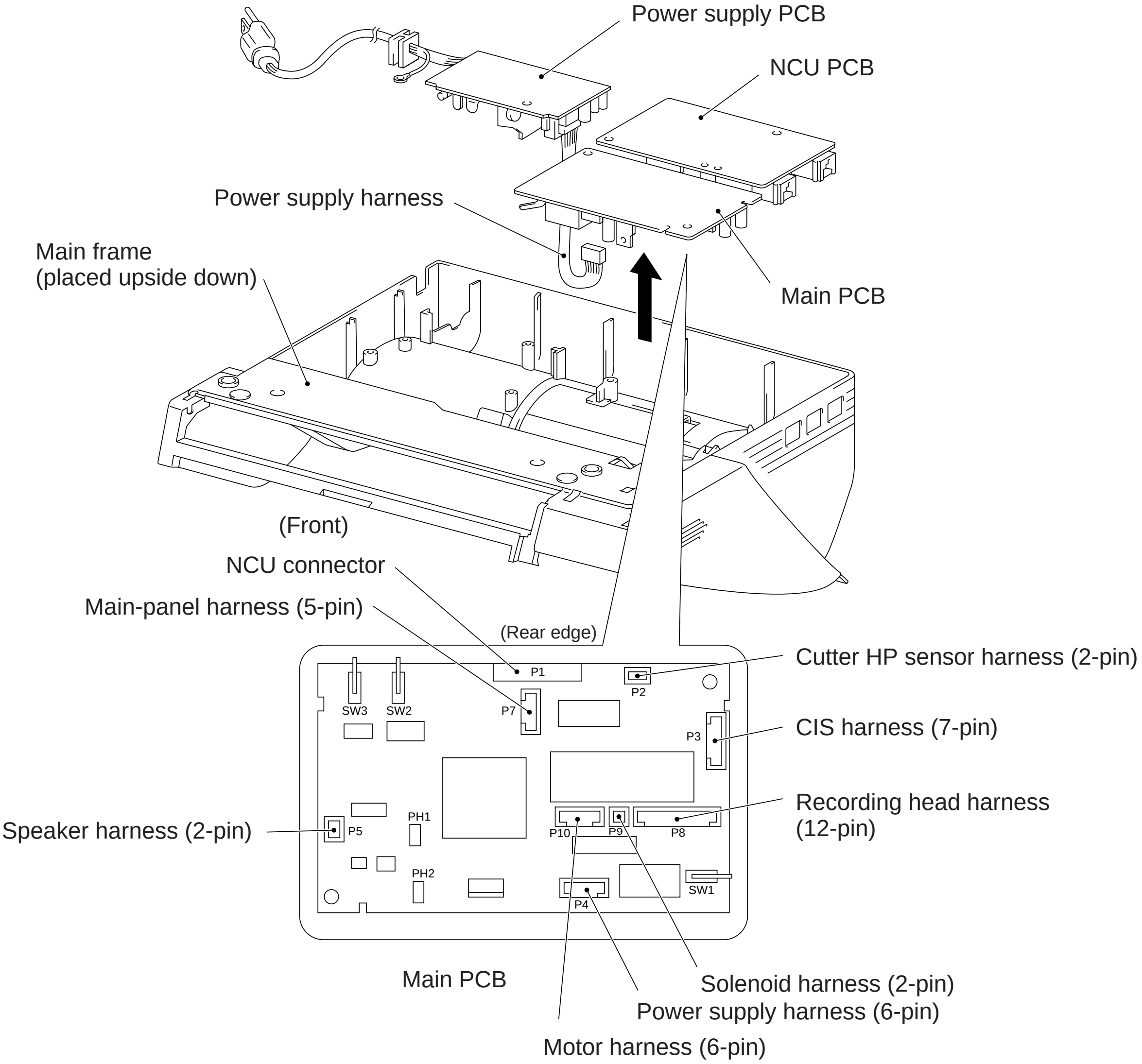
FAX255/FAX275/FAX-515/HOMEFAX3

(1) Slightly lift up the rear edge of the NCU PCB and disconnect it from the main PCB.

(2) Slightly lift up the rear edge of the main PCB and disconnect the following harnesses from the main PCB:

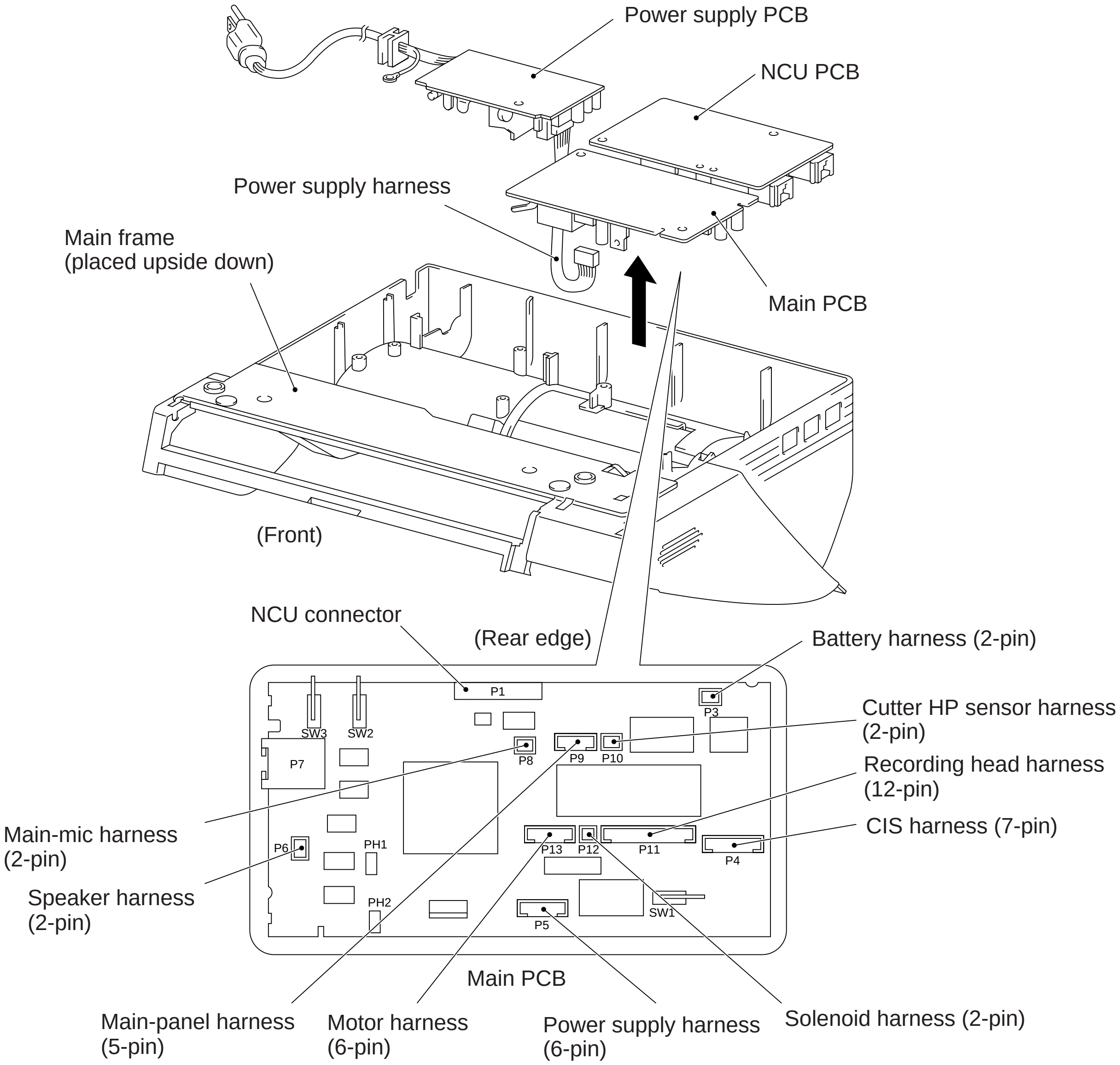
- Main-panel harness (5-pin)
- Cutter home position (HP) sensor harness (2-pin)
- CIS harness (7-pin)
- Recording head harness (12-pin)
- Solenoid harness (2-pin)
- Motor harness (6-pin)
- Speaker harness (2-pin)
- Power supply harness (6-pin)

(3) Lift up the power supply PCB.

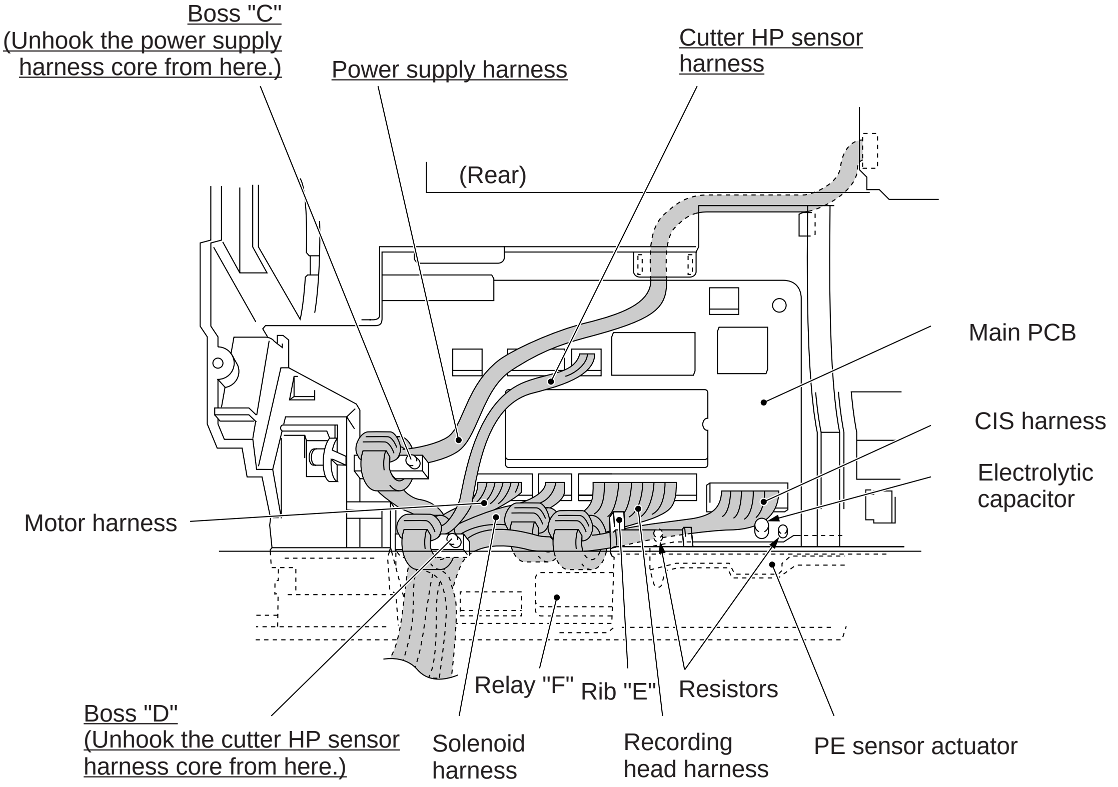

Power supply PCB
NCU PCB
Power supply harness
Main frame
(placed upside down)
Main PCB
(Front)
NCU connector
Main-panel harness (5-pin)
(Rear edge)
Cutter HP sensor harness (2-pin)
CIS harness (7-pin)
Recording head harness
(12-pin)
Speaker harness (2-pin)
P1
P2
P3
P4
P5
P7
P8
P9
P10
SW1
SW2
SW3
PH1
PH2
Main PCB
Solenoid harness (2-pin)
Power supply harness (6-pin)
Motor harness (6-pin)

FAX355MC/FAX375MC/FAX-525DT/FAX-525MC

(1) Slightly lift up the rear edge of the NCU PCB and disconnect it from the main PCB.


Power supply PCB
NCU PCB
Power supply harness
Main frame
(placed upside down)
Main PCB
(Front)
NCU connector
(Rear edge)
Battery harness (2-pin)
Cutter HP sensor harness
(2-pin)
Recording head harness
(12-pin)
CIS harness (7-pin)
Main-mic harness
(2-pin)
Speaker harness
(2-pin)
P1
SW3
SW2
P3
P7
P8
P9
P10
P6
PH1
P13
P12
P11
P4
PH2
SW1
P5
Main PCB
Main-panel harness
(5-pin)
Motor harness
(6-pin)
Power supply harness
(6-pin)
Solenoid harness (2-pin)

(2) Attempt to lift up the main PCB slightly. If it is impossible to lift up the PCB to an extent which allows you to disconnect the harnesses, you may not have unhooked the power supply harness core or cutter HP sensor harness core from bosses "C" or "D," respectively. Remove the ROM cover (refer to Section 1.2) and unhook those cores from bosses "C" and "D" illustrated below.


Boss "C"
(Unhook the power supply harness core from here.)
Power supply harness
Cutter HP sensor harness
(Rear)
Main PCB
CIS harness
Electrolytic capacitor
Motor harness
Relay "F"
Rib "E"
Resistors
Boss "D"
(Unhook the cutter HP sensor harness core from here.)
Solenoid harness
Recording head harness
PE sensor actuator

(3) Slightly lift up the rear edge of the main PCB and disconnect the following harnesses from the main PCB:

- Cutter home position (HP) sensor harness (2-pin)
- Main-panel harness (5-pin)
- Main-mic harness (2-pin)
- Speaker harness (2-pin)
- Motor harness (6-pin)
- Power supply harness (6-pin)
- Solenoid harness (2-pin)
- Recording head harness (12-pin)
- CIS harness (7-pin)

(4) Lift up the power supply PCB.

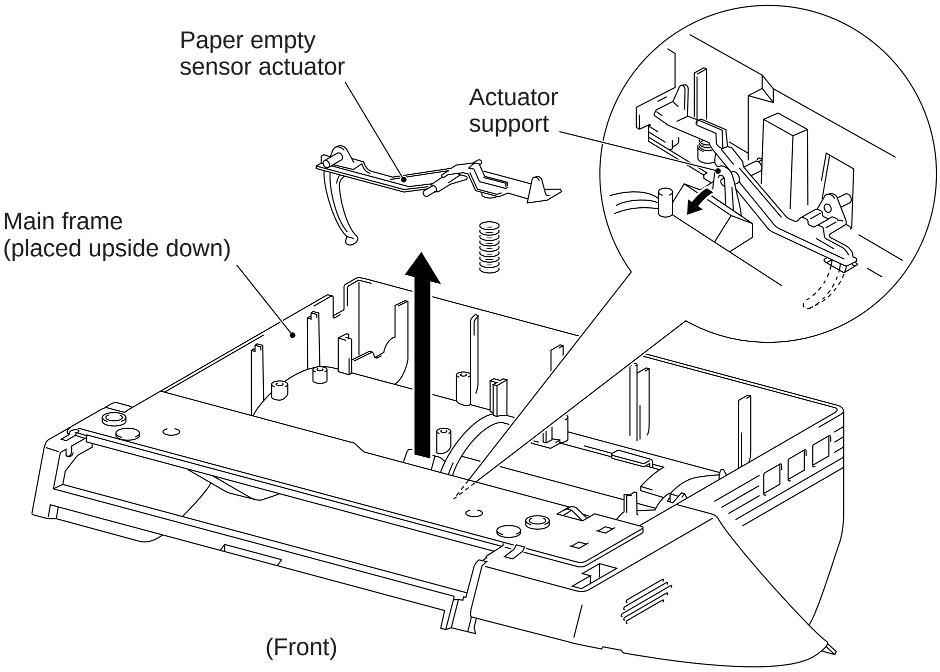
■ Reassembling Notes

- Make sure that the power supply PCB is completely fitted in the resin PCB supports of the main frame. If it is loosely mounted so that it comes into contact with the bottom plate, a short circuit may occur.
- For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: After putting the scanner frame ASSY back onto the main frame, route the harnesses and arrange the cores as follows, referring to the illustration given on the previous page.
    - Hook the power supply harness core on boss "C."
    - Check that the cutter HP sensor harness runs through a core, and then hook the core on boss "D."
    - Push the CIS harness core and the recording head harness core to the left of rib "E" and behind relay "F."
    - Route all these harnesses under boss "D."

  If any of these harnesses and cores are out of the specified position, the scanner frame ASSY or ROM cover may not be put back into place.
- For the FAX355MC/FAX375MC/FAX-525DT/FAX-525MC: After connecting these harnesses, check that neither the electrolytic capacitor nor resistors are tilted towards the PE sensor actuator. If tilted, they may interfere with normal operation of the sensor actuator.

1.19 Paper Empty Sensor Actuator

(1) Press the actuator support outwards and lift up the paper empty sensor actuator. The spring also comes off.

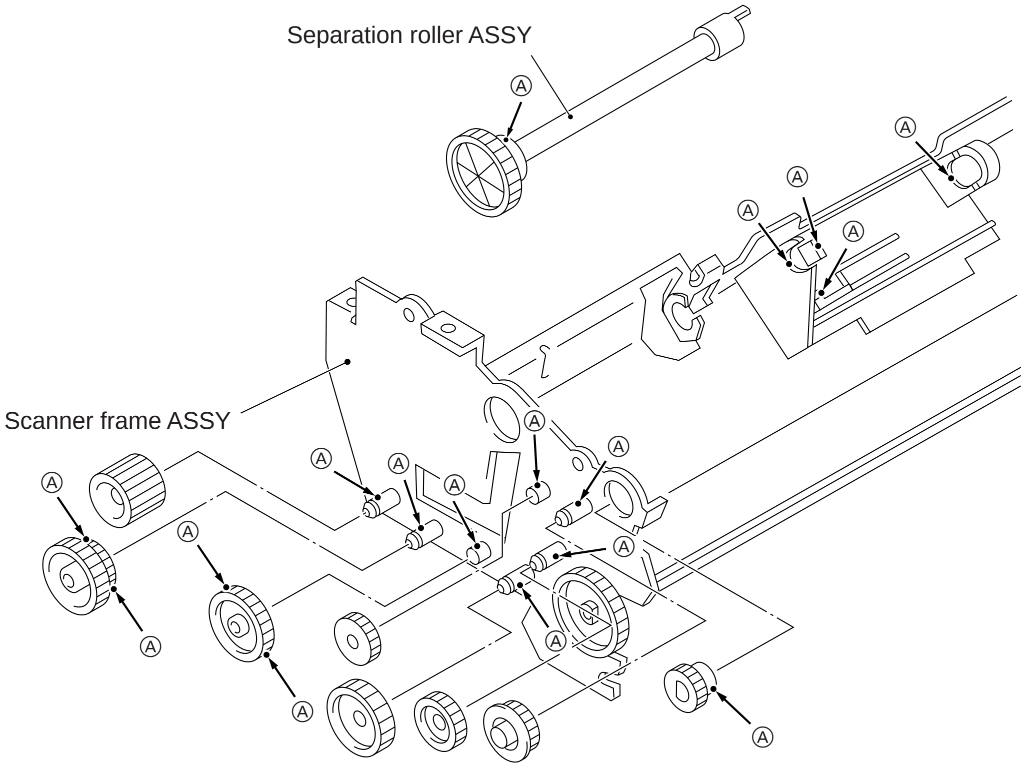

Paper empty sensor actuator
Actuator support
Main frame (placed upside down)
(Front)

2. LUBRICATION

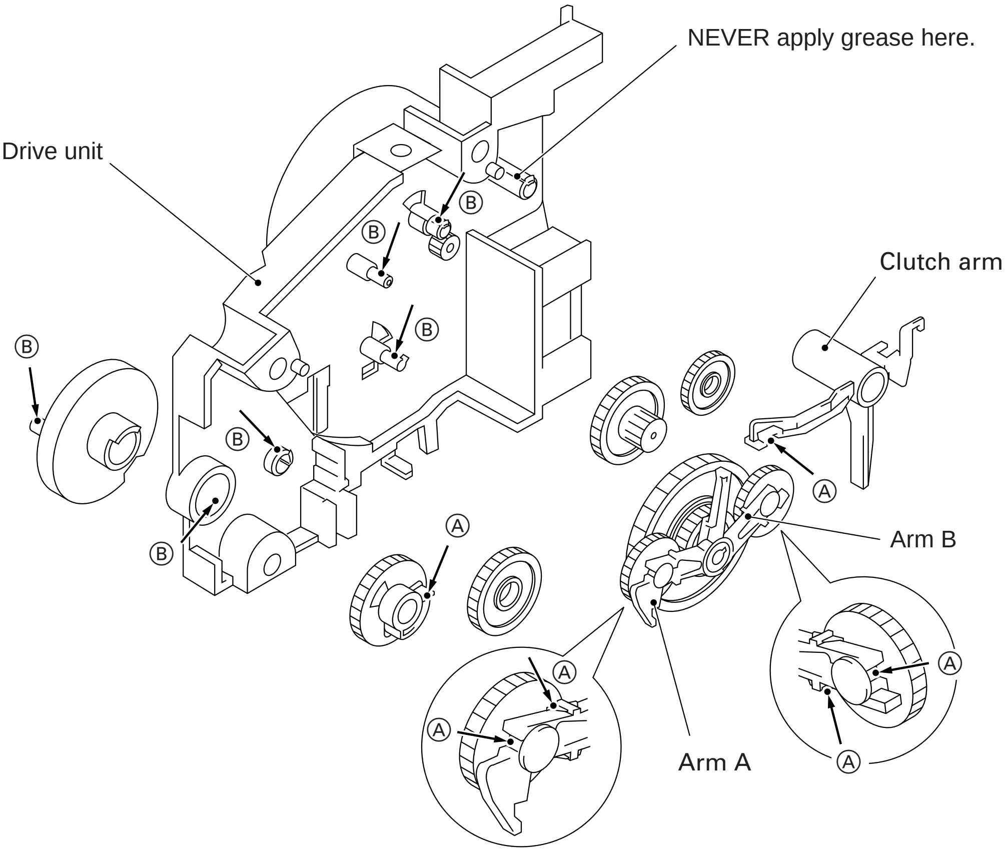
Apply Molykote EM-30L to the lubrication points as illustrated below.

For points Ⓐ, apply a rice-sized pinch of grease (6 mm^3).
For points Ⓑ, apply a bean-sized pinch of grease (12 mm^3).

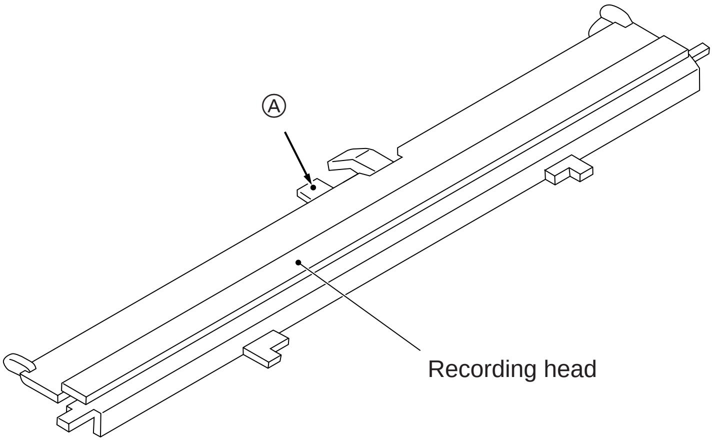
[1] Scanner frame ASSY


Separation roller ASSY
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Scanner frame ASSY
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Ⓐ

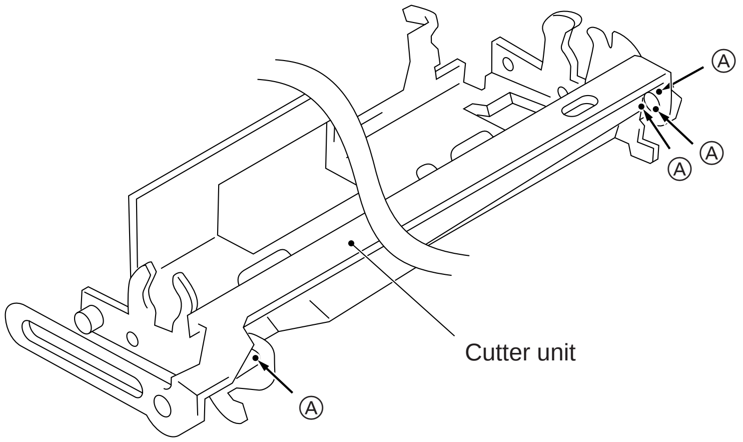
[2]   Drive unit


NEVER apply grease here.
Drive unit
Ⓑ
Ⓑ
Ⓑ
Clutch arm
Ⓑ
Ⓑ
Ⓑ
Ⓐ
Ⓐ
Arm B
Ⓐ
Ⓐ
Ⓐ
Ⓐ
Arm A
Ⓐ

[3]   Recording head


Ⓐ
Recording head

[4]   Cutter unit


Ⓐ
Ⓐ
Ⓐ
Cutter unit
Ⓐ

CHAPTER V.

MAINTENANCE MODE

CHAPTER V. MAINTENANCE MODE

CONTENTS

1. ENTRY INTO THE MAINTENANCE MODE V-1

2. LIST OF MAINTENANCE-MODE FUNCTIONS V-2

3. DETAILED DESCRIPTION OF MAINTENANCE-MODE FUNCTIONS V-4

3.1 EEPROM Parameter Initialization V-4
3.2 Printout of Scanning Compensation Data V-5
3.3 ADF Performance Test V-7
3.4 Test Pattern 1 .... V-8
3.5 Firmware Switch Setting and Printout V-9
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1. ENTRY INTO THE MAINTENANCE MODE

FAX255/FAX275/FAX355MC/FAX375MC: To make the facsimile equipment enter the maintenance mode, press the **Function**, *****, **2**, **8**, **6**, and **4** keys in this order.

|← Within 2 seconds →|

FAX-515/FAX-525DT/FAX-525MC/HOMEFAX3: To make the facsimile equipment enter the maintenance mode, press the **Menu**, *****, **2**, **8**, **6**, and **4** keys in this order.

|← Within 2 seconds →|

The equipment beeps for approx. one second and displays " ▮▮ MAINTENANCE ▮▮▮ " on the LCD, indicating that it is placed in the initial stage of the maintenance mode, a mode in which the equipment is ready to accept entry from the keys.

To select one of the maintenance-mode functions listed in Section 2, enter the corresponding 2-digit function code with the numerical keys on the control panel. (The details of each maintenance-mode function are described in Section 3.)

NOTES:

- Pressing the **9** key twice in the initial stage of the maintenance mode makes the equipment exit from the maintenance mode, restoring it to the standby state.
- Pressing the **Stop** button after entering only one digit restores the equipment to the initial stage of the maintenance mode.
- If an invalid function code is entered, the equipment resumes the initial stage of the maintenance mode.

2. LIST OF MAINTENANCE-MODE FUNCTIONS

Maintenance-mode Functions

Function Code	Function	Reference Subsection (Page)
01	EEPROM Parameter Initialization	3.1 (V-4)
02	—————	—————
03	—————	—————
04	—————	—————
05	Printout of Scanning Compensation Data	3.2 (V-5)
06	—————	—————
07	—————	—————
08	ADF* Performance Test	3.3 (V-7)
09	Test Pattern 1	3.4 (V-8)
10	Firmware Switch Setting	3.5 (V-9)
11	Printout of Firmware Switch Data	3.5 (V-50)
12	Operational Check of LCD	3.6 (V-51)
13	Operational Check of Control Panel PCB (Check of Keys and Buttons)	3.7 (V-51)
32	Sensor Operational Check	3.8 (V-53)
54	Fine Adjustment of Scanning Start/End Position	3.9 (V-54)
55	CIS Scanner Area Setting	3.10 (V-55)
74	EEPROM Customizing	3.11 (V-55)
82	Equipment Error Code Indication	3.12 (V-56)
87	Output of Transmission Log to the Telephone Line	3.13 (V-56)
91	EEPROM Parameter Initialization (except the telephone number storage area)	3.1 (V-4)
99	Exit from the Maintenance Mode	---- (V-1)
-----	Document Draw Adjustment	3.14 (V-57)

* ADF: Automatic document feeder

------------------------- **IMPORTANT** ------------------------------

Basically, the maintenance-mode functions listed on the previous page should be accessed by service personnel only. However, you may allow end users to access some of these under the guidance of service personnel (e.g., by telephone).

The user-accessible functions (codes 10, 11, 12, 82, 87 and 91) are shaded in the table given on the previous page. Function code 10 accesses the firmware switches WSW01 to WSW37, each of which has eight selectors. You should not allow end users to access all of those selectors, but you may allow them to access user-accessible selectors which are shaded in the firmware switch tables in Subsection 3.5.

The service personnel should instruct end users to follow the procedure given below.

(1) FAX255/FAX275/FAX355MC/FAX375MC: Press the **Function** and **Mode** keys in this order.

FAX-515/FAX-525DT/FAX-525MC/HOMEFAX3: Press the **Menu** and **Mode** keys in this order.

The LCD clears the current display.

NOTE: The **Mode** key is inoperable during standby for redialing and timer.

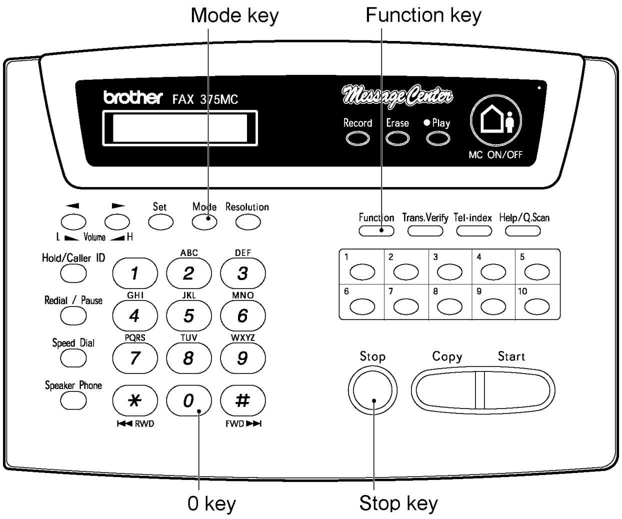
(2) Press the **0** key.

(3) Enter the desired function code (10, 11, 12, 82, 87, or 91) with the numerical keys.

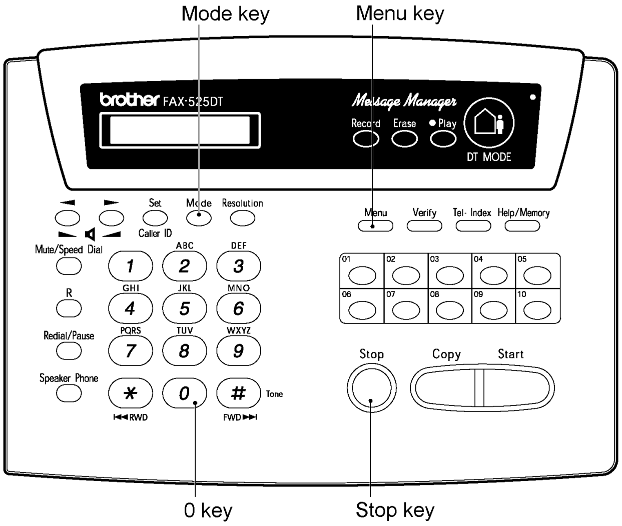
For function code 10, access the desired firmware switch according to the operating procedure described in Subsection 3.5.

(4) To make the equipment return to the standby state, press the **Stop** key.

FAX255/FAX275/FAX355MC/FAX375MC


Mode key
Function key
brother FAX 375MC
Message Center
Record
Erase
Play
MC ON/OFF
Set
Mode
Resolution
Volume
Function
Trans.Verify
Tel-index
Help/Q.Scan
Hold/Caller ID
Redial / Pause
Speed Dial
Speaker Phone
RWD
FWD
Stop
Copy
Start
0 key
Stop key

FAX-515/FAX-525DT/FAX-525MC/HOMEFAX3


Mode key
Menu key
brother FAX-525DT
Message Manager
Record
Erase
Play
DT MODE
Set
Mode
Resolution
Caller ID
Menu
Verify
Tel- Index
Help/Memory
Mute/Speed Dial
R
Redial/Pause
Speaker Phone
Tone
RWD
FWD
Stop
Copy
Start
0 key
Stop key

3. DETAILED DESCRIPTION OF MAINTENANCE-MODE FUNCTIONS

3.1 EEPROM Parameter Initialization

n Function

The equipment initializes the parameters, user switches, and firmware switches registered in the EEPROM, to the initial values. Entering the function code 01 initializes all of the EEPROM areas, but entering 91 does not initialize some areas, as listed below.

Function code Data item	01	91
Maintenance-mode functions User switches Firmware switches Remote activation code Activity report Distinctive ringing patterns registered	All of these will be initialized	These will be initialized
Station ID data Outside line number Remote access code FAX forwarding/paging Telephone function registration One-touch dialing Speed dialing Group dialing		These will not be initialized
EEPROM customizing code (4-digit)	This will not be initialized. (Note that the first digit of the 4-digit code will be initialized to "0." If the code is 1001, for example, it will be initialized to 0001.)	

NOTE: If you replace the main PCB with one used for other facsimile equipment, carry out this procedure and then customize the EEPROM (maintenance-mode function code 74 in Section 3.11).

n Operating Procedure

(1) Press the **0** and **1** keys (or the **9** and **1** keys according to your need) in this order in the initial stage of the maintenance mode.

The "PARAMETER INIT" will appear on the LCD.

(2) Upon completion of parameter initialization, the equipment returns to the initial stage of the maintenance mode.

3.2 Printout of Scanning Compensation Data

n Function

The equipment prints out the white and black level data for scanning compensation.

n Operating Procedure

Do not start this function merely after powering on the equipment but start it after carrying out a sequence of scanning operation. Unless the equipment has carried out any scanning operation, this function cannot print out correct scanning compensation data. This is because at the start of scanning operation, the equipment initializes white and black level data and takes in the scanning compensation reference data.

(1) Press the **0** and **5** keys in this order in the initial stage of the maintenance mode.

The "WHITE LEVEL 1" will appear on the LCD.

(2) The equipment prints out the scanning compensation data list containing the following:

- a) White level data (208 bytes)
- b) Black level data (1 byte)
- c) Initial clamp PWM value (1 byte)
- d) Clamp PWM value (1 byte)
- e) Compensation data for background color (1 byte)
- f) Limitation value for compensation data (1 byte)
- g) Initial LED light intensity value (1 byte)
- h) LED light intensity value (1 byte)
- i) LED light intensity value on the platen and documents (2 bytes)
- j) Threshold value on the platen (1 byte)
- k) Document rear sensor adjustment value (1 byte)

(3) Upon completion of recording of the compensation data list, the equipment returns to the initial stage of the maintenance mode.

NOTE: If any data is abnormal, its code will be printed in inline style, as shown on the next page.

```
a)  5F00 : 39 3F 3F 3D 3D 3B 3B 3B  3D 3D 3D 39 39 39 3B 3D
    5F10 : 2D 23 11 1D 11 1C 1C 13  23 23 23 23 23 23 23 23
    5F20 : 23 23 23 0F 11 11 16 11  11 21 23 23 23 23 2A 2A
    5F30 : 1A 23 1D 18 23 18 1A 13  1C 23 13 18 16 18 16 16
    5F40 : 13 1A 15 13 1F 21 1A 1F  1D 24 23 24 28 1C 24 2A
    5F50 : 26 1F 21 21 24 24 16 1F  1D 1A 1D 21 1A 1F 24 26
    5F60 : 24 24 23 1F 16 18 1A 18  18 16 18 1A 1D 1A 1C 18
    5F70 : 18 18 0E 16 13 0E 18 1A  1A 15 16 16 0C 13 18 1F
    5F80 : 1C 1C 15 18 13 13 15 13  1A 15 1A 11 1D 0C 18 11
    5F90 : 11 16 13 13 0E 1D 1D 0F  18 0C 11 1C 1D 1D 11 15
    5FA0 : 0C 1D 16 0E 18 2B 1A 2D  16 18 24 1C 26 23 15 11
    5FB0 : 16 1A 0F 0E 0F 23 0F 0F  18 1D 1D 26 2D 2D 36 3B
    5FC0 : 39 38 39 39 3B 3D 3D 3B  38 38 36 38 39 3D 3B 3B

b)  5F00 : 00

c)  5F00 : 21

d)  5F00 : 00

e)  5F00 : 00

f)  5F00 : 45

g)  5F00 : 35

h)  5F00 : 22

i)  5F00 : 00 00

j)  5F00 : FF

k)  5F00 : 55
```

Scanning Compensation Data List

3.3 ADF Performance Test

n Function

The equipment counts the documents fed by the automatic document feeder (ADF) and displays the count on the LCD for checking the ADF performance.

n Operating Procedure

(1) Set documents (Allowable up to the ADF capacity) in the initial stage of the maintenance mode.

The "DOC. READY" will appear on the LCD.

(2) Press the **0** and **8** keys in this order.

The equipment

- i) copies the 1st document and displays “COPY P.01 STD” on the LCD.
- ii) feeds in and out the 2nd through 4th documents while counting without copying them as the LCD shows the corresponding count,
- iii) copies the 5th document and displays “COPY P.05 STD” on the LCD,
- iv) feeds in and out the 6th through 9th documents while counting without copying them as the LCD shows the corresponding count, and
- v) copies the 10th document and displays “COPY P.10 STD” on the LCD.

(3) Upon completion of feeding in and out all of the documents, the final count appears on the LCD.

(4) Press the **Stop** key to return the equipment to the initial maintenance mode.

3.4 Test Pattern 1

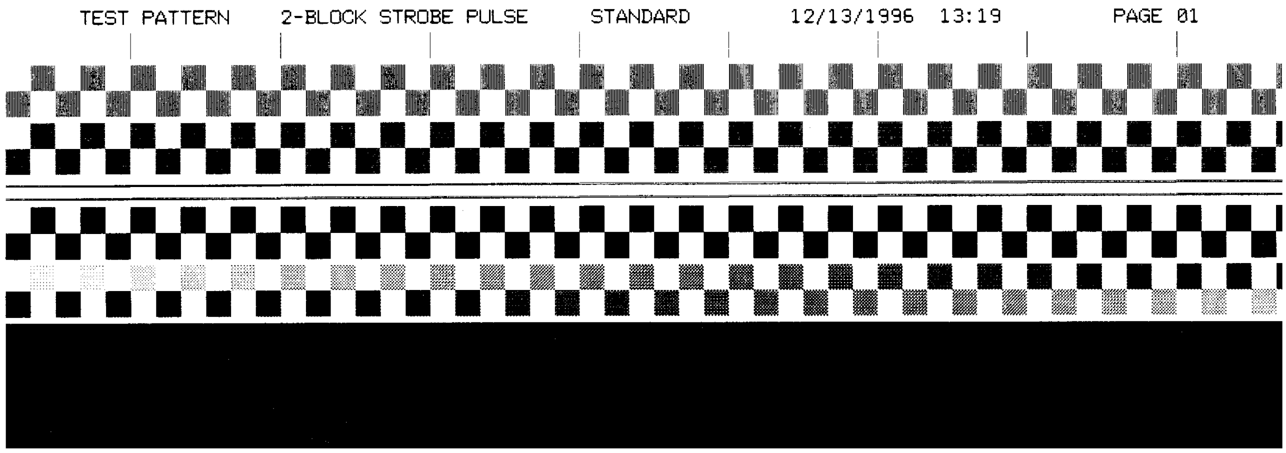
n Function

This function, much like the copying function, prints out test pattern 1 to allow the service personnel to check for record data missing or print quality.

n Operating Procedure

Press the **0** and **9** keys in this order in the initial stage of the maintenance mode.

The figure below shows test pattern 1.


TEST PATTERN
2-BLOCK STROBE PULSE
STANDARD
12/13/1996 13:19
PAGE 01

Test Pattern 1

3.5 Firmware Switch Setting and Printout

[A] Firmware switch setting

n Function

The facsimile equipment incorporates the following firmware switch functions (WSW01 through WSW37) which may be activated with the procedures using the control panel keys and buttons. The firmware switches have been set at the factory in conformity to the communications standards and codes of each country. Do not disturb them unless necessary. Some firmware switches may not be applicable in some versions. The firmware switch data list indicates "Not used." for those inapplicable switches.

Firmware Switches (WSW01 through WSW37)

WSW No.	Function	Reference Page
WSW01	Dial pulse setting	V-11
WSW02	Tone signal setting	V-12
WSW03	PABX mode setting	V-13
WSW04	TRANSFER facility setting	V-15
WSW05	1st dial tone and busy tone detection	V-16
WSW06	**Pause** key setting and 2nd dial tone detection	V-18
WSW07	Dial tone setting 1	V-20
WSW08	Dial tone setting 2	V-21
WSW09	Protocol definition 1	V-22
WSW10	Protocol definition 2	V-23
WSW11	Busy tone setting	V-24
WSW12	Signal detection condition setting	V-25
WSW13	Modem setting	V-26
WSW14	AUTO ANS facility setting	V-27
WSW15	REDIAL facility setting	V-28
WSW16	Function setting 1	V-29
WSW17	Function setting 2	V-30
WSW18	Function setting 3	V-31
WSW19	Transmission speed setting	V-32
WSW20	Overseas communications mode setting	V-33
WSW21	TAD setting 1	V-34
WSW22	ECM setting	V-35
WSW23	Communications setting	V-36
WSW24	TAD setting 2	V-37
WSW25	TAD setting 3	V-38
WSW26	Function setting 4	V-39
WSW27	Function setting 5	V-40
WSW28	Function setting 6	V-41
WSW29	Function setting 7	V-42
WSW30	Function setting 8	V-43
WSW31	Function setting 9	V-44
WSW32	Function setting 10	V-45
WSW33	Function setting 11	V-46
WSW34	Function setting 12	V-47
WSW35	Function setting 13	V-48
WSW36	Function setting 14	V-48
WSW37	Function setting 15	V-49

n Operating Procedure

(1) Press the **1** and **0** keys in this order in the initial stage of the maintenance mode.

The equipment displays the "WSW00" on the LCD and becomes ready to accept a firmware switch number.

(2) Enter the desired number from the firmware switch numbers (01 through 37).

The following appears on the LCD:

WSWXX = 0 0 0 0 0 0 0 0

(3) Use the ◀ and ▶ keys to move the cursor to the selector position to be modified.

(4) Enter the desired number using the **0** and **1** keys.

(5) Press the **Set** key. This operation saves the newly entered selector values onto the EEPROM and readies the equipment for accepting a firmware switch number.

(6) Repeat steps (2) through (5) until the modification for the desired firmware switches is completed.

(7) Press the **Set** or **Stop** key to return the equipment to the initial stage of the maintenance mode.

NOTES:

- To cancel this operation and return the equipment to the initial stage of the maintenance mode during the above procedure, press the **Stop** key.
- If there is a pause of more than one minute after a single-digit number is entered for double-digit firmware switch numbers, the equipment will automatically return to the initial stage of the maintenance mode.

n Note

The user-accessible selectors of the firmware switches are shaded in the tables given on the following pages.

Detailed Description for the Firmware Switches

WSW01 (Dial pulse setting)

Selector No.	Function	Setting and Specifications
1 2	Dial pulse generation mode	No. 1 2 0 0 : N 0 1 : N+1 1 0 : 10-N 1 1 : N
3 4	Break time length in pulse dialing	No. 3 4 0 0 : 60 ms 0 1 : 67 ms 1 0 : 40 ms (for 16 PPS) 1 1 : 64 ms (at 106-ms intervals)
5 6	Inter-digit pause	No. 5 6 0 0 : 800 ms 0 1 : 850 ms 1 0 : 950 ms 1 1 : 600 ms
7	Switching between pulse (DP) and tone (PB) dialing, by the function switch	0: Yes 1: No
8	Default dialing mode, pulse (DP) or tone (PB) dialing	0: PB 1: DP

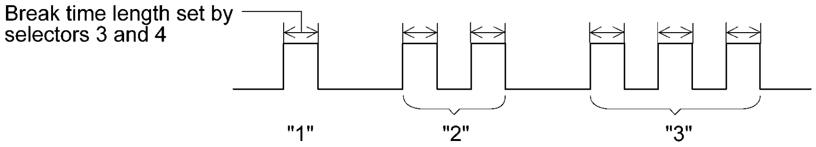
- **Selectors 1 and 2: Dial pulse generation mode**

  These selectors set the number of pulses to be generated in pulse dialing.

  N: Dialing "N" generates "N" pulses. (Dialing "0" generates 10 pulses.)
  N + 1: Dialing "N" generates "N + 1" pulses.
  10 - N: Dialing "N" generates "10 - N" pulses.

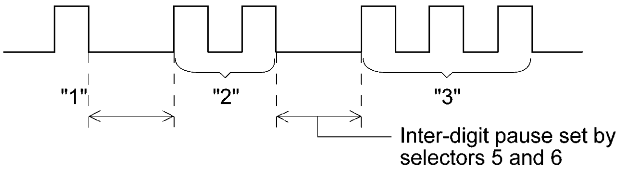
- **Selectors 3 and 4: Break time length in pulse dialing**

  These selectors set the break time length in pulse dialing.
  (Example: If "1," "2," and "3" are dialed when N is set by selectors 1 and 2.)



- **Selectors 5 and 6: Inter-digit pause**

  These selectors set the inter-digit pause in pulse dialing.
  (Example: If "1," "2," and "3" are dialed when N is set by selectors 1 and 2.)



- **Selector 7: Switching between pulse (DP) and tone (PB) dialing, by the function switch**

  This selector determines whether or not the dialing mode may be switched between the pulse (DP) and tone (PB) dialing by using the function switch.

- **Selector 8: Default dialing mode, pulse (DP) or tone (PB) dialing**

  This selector sets the default dialing mode (pulse dialing or tone dialing) which may be changed by the function switch. If the user switches it with the function switch when selector 7 is set to "0," the setting specified by this selector will also be switched automatically.

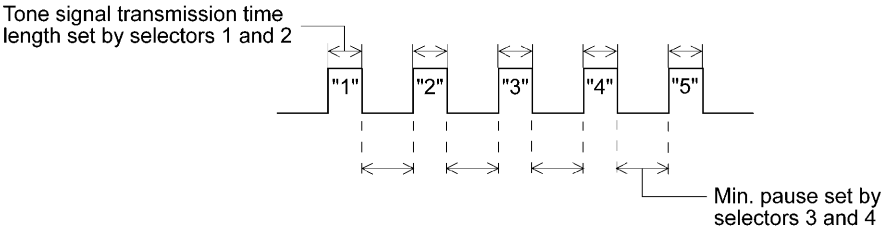
WSW02 (Tone signal setting)

Selector No.	Function	Setting and Specifications
1 2	Tone signal transmission time length	No. 1 2 0 0 : 70 ms 0 1 : 80 ms 1 0 : 90 ms 1 1 : 100 ms
3 4	Min. pause in tone dialing	No. 3 4 0 0 : 70 ms 0 1 : 80 ms 1 0 : 90 ms 1 1 : 140 ms
5 | 8	Attenuator for pseudo ring backtone to the line (selectable in the range of 0-15 dB)	0: 0 dB 1: 8 dB 0: 0 dB 1: 4 dB 0: 0 dB 1: 2 dB 0: 0 dB 1: 1 dB

- **Selectors 1 through 4: Tone signal transmission time length and Min. pause in tone dialing**

  These selectors set the tone signal transmission time length and minimum pause in tone dialing.

  (Example: If "1," "2," "3," "4," and "5" are dialed.)


Tone signal transmission time length set by selectors 1 and 2
"1"
"2"
"3"
"4"
"5"
Min. pause set by selectors 3 and 4

- **Selectors 5 through 8: Attenuator for pseudo ring backtone to the line**

  These selectors are used to adjust the sound level of beep generated as a ring backtone in the F/T mode or as a signal during remote control operation or at the start of ICM recording.

  Setting two or more selectors to "1" produces addition of attenuation assigned to each selector. This setting will be limited if selector 8 of WSW23 is set to "0."

WSW03 (PABX* mode setting)

Selector No.	Function	Setting and Specifications
1	CNG detection when sharing a modular wall socket with a telephone	0: A 1: B
2 | 4	Min. detection time length of PABX* dial tone, required for starting dialing	No. 2 3 4 0 0 0 : 50 ms 0 0 1 : 210 ms 0 1 0 : 500 ms 0 1 1 : 800 ms 1 0 0 : 900 ms 1 0 1 : 1.5 sec. 1 1 0 : 2.0 sec. 1 1 1 : 2.5 sec.
5	CNG detection when sharing a modular wall socket with a telephone	0: A 1: B
6 7	Dial tone detection in PABX*	No. 6 7 0 0 : No detection (3.5 sec. WAIT) 0 1 : No detection (5 sec. WAIT) 1 0 : No detection (7 sec. WAIT) 1 1 : Detection (Frequency only)
8	"R" key function	0: 1st dial tone detection add 1: No 1st dial tone detection

* PABX: Private automatic branch exchange

NOTE: Selectors 2 through 4 and 6 through 8 are not applicable where no PABX is installed.

- **Selectors 1 and 5: CNG detection when sharing a modular wall socket with a telephone**

  These selectors determine whether or not the equipment detects a CNG signal when a line is connected to a telephone sharing a modular wall socket with the equipment. Upon detection of CNG signals by the number of cycles specified by these selectors, the equipment interprets CNG as an effective signal and then starts FAX reception.

Selector		Cycle
No. 1	No. 5	
0 (A)	0 (A)	0.5 cycle
0 (A)	1 (B)	1.0 cycle
1 (B)	0 (A)	1.5 cycles
1 (B)	1 (B)	2.0 cycles

- **Selectors 2 through 4: Min. detection time length of PABX dial tone, required for starting dialing**

  Upon detection of the PABX dial tone for the time length set by these selectors, the equipment starts dialing.

  These selectors are effective only when both selectors 6 and 7 are set to "1" (Detection).

- **Selectors 6 and 7: Dial tone detection in PABX**

These selectors activate or deactivate the dial tone detection function which detects a dial tone when a line is connected to the PABX.

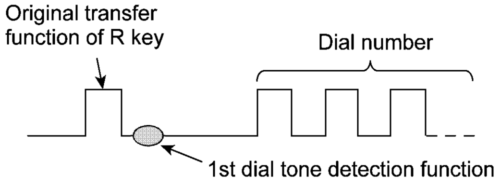
Setting both of these selectors to "1" activates the dial tone detection function so that the equipment starts dialing upon detection of a dial tone when a line is connected.

Other setting combinations deactivate the dial tone detection function so that the equipment starts dialing after the specified WAIT (3.5, 5.0, or 7.0 sec.) without detection of a dial tone when a line is connected.

- **Selector 8: "R" key function**

This selector determines whether or not the 1st dial tone detection function (specified by selectors 1 through 3 of WSW05) is added to the R key.

If this selector is set to "0," pressing the R key automatically activates the 1st dial tone detection function when the PABX and the automatic calling are selected by using the function switch. If you press the R key and a dial number in succession, the equipment will automatically carry out the 1st dial tone detection function following the original transfer function as shown below.



WSW04 (TRANSFER facility setting)

Selector No.	Function	Setting and Specifications
1	Earth function in transfer facility	0: Provided 1: Not provided
2 3	Dual tone detection frequency in ICM recording	No. 2 3 0 0 : 350 and 440 Hz (A) 0 1 : 440 and 480 Hz (B) 1 x : 480 and 620 Hz (C)
4	Tone detection sensitivity in ICM recording	0: OFF 1: High
5 6	Earth time length for earth function	No. 5 6 0 0 : 200 ms 0 1 : 300 ms 1 0 : 500 ms 1 1 : 700 ms
7 8	Break time length for flash function	No. 7 8 0 0 : 80 ms 0 1 : 110 ms 1 0 : 250 ms 1 1 : 500 ms

NOTE: Selectors 1 and 5 through 8 are not applicable in those countries where no transfer facility is supported.

NOTE: Selectors 2 through 4 are applicable to those models equipped with a built-in TAD.

NOTE: Selectors 2 and 3 are applicable in the U.S.A.

- **Selector 1: Earth function in transfer facility**

  This selector determines whether or not the earth function is added to the transfer setting menu to be accessed by the function switch.

- **Selectors 2 and 3: Dual tone detection frequency in ICM recording**

  If the equipment detects either of the frequencies set by these selectors in ICM recording, it will disconnect the line. For example, if these selectors are set to “0, 0,” the equipment will disconnect the line upon detection of 350 Hz or 440 Hz.

- **Selectors 4: Tone detection sensitivity in ICM recording**

  Setting this selector to “1” increases the tone detection sensitivity in ICM recording.

- **Selectors 5 and 6: Earth time length for earth function**

  These selectors set the short-circuiting time length of the telephone line (La or Lb) to ground.

  This setting is effective only when the earth function is selected for the R key by using the function switch.

- **Selectors 7 and 8: Break time length for flash function**

  These selectors set the break time length.

  This setting is effective only when the flash function is selected for the R key by using the function switch.

WSW05 (1st dial tone and busy tone detection)

Selector No.	Function	Setting and Specifications
1 | 3	1st dial tone detection	No. 1 2 3 0 0 0 : 3.5 sec. WAIT 0 0 1 : 7.0 sec. WAIT 0 1 0 : 10.5 sec. WAIT 0 1 1 : 14.0 sec. WAIT 1 0 0 : 17.5 sec. WAIT 1 0 1 : 21.0 sec. WAIT 1 1 0 : 24.5 sec. WAIT 1 1 1 : Detection (Without WAIT)
4	Max. pause time allowable for remote ID code detection	0 : 2 seconds 1: 1 second
5 6	Busy tone detection in automatic sending mode	No. 5 6 0 0 : No detection 0 1 : Detection only after dialing 1 0 : No detection 1 1 : Detection before and after dialing
7	Busy tone detection in automatic receiving mode	0: Yes 1: No
8	Not used.	

NOTE: Selectors 5 through 7 are not applicable in those countries where no busy tone detection is supported, e.g., China.

- **Selectors 1 through 3: 1st dial tone detection**

  These selectors activate or deactivate the 1st dial tone detection function which detects the 1st dial tone issued from the PSTN when a line is connected to the PSTN.

  Setting all of these selectors to "1" activates the dial tone detection function so that the equipment starts dialing upon detection of a dial tone when a line is connected. (However, in those countries which support no dial tone detection function, e.g., in the U.S.A., setting these selectors to "1" makes the equipment start dialing after a WAIT of 3.5 seconds.) For the detecting conditions of the 1st dial tone, refer to WSW07 and WSW08.

  Other setting combinations deactivate the dial tone detection function so that the equipment starts dialing after the specified WAIT (3.5, 7.0, 10.5, 14.0, 17.5, 21.0, or 24.5 seconds) without detection of a dial tone when a line is connected to the PSTN.

- **Selector 4: Max. pause time allowable for remote ID code detection**

  This selector sets the maximum pause time allowable for detecting the second digit of a remote ID code after detection of the first digit in remote reception.

  If selector 4 is set to "0" (2 seconds), for instance, only a remote ID code whose second digit is detected within 2 seconds after detection of the first digit will become effective so as to activate the remote function.

- **Selectors 5 and 6: Busy tone detection in automatic sending mode**

  These selectors determine whether or not the equipment automatically disconnects a line upon detection of a busy tone in automatic sending mode.

  Setting selector 6 to "0" ignores a busy tone so that the equipment does not disconnect the line.

  Setting selectors 5 and 6 to "0" and "1," respectively, makes the equipment detect a busy tone only after dialing and disconnect the line.

  Setting both of selectors 5 and 6 to "1" makes the equipment detect a busy tone before and after dialing and then disconnect the line.

- **Selector 7: Busy tone detection in automatic receiving mode**

  This selector determines whether or not the equipment automatically disconnects a line upon detection of a busy tone in automatic receiving mode.

WSW06 (Pause key setting and 2nd dial tone detection)

Selector No.	Function	Setting and Specifications
1 | 3	**Pause** key setting and 2nd dial tone detection	No. 1 2 3 0 0 0 : No pause 0 0 1 : 3.5 sec. WAIT 0 1 0 : 7 sec. WAIT 0 1 1 : 10.5 sec. WAIT 1 0 0 : 14 sec. WAIT 1 1 0 : 2nd dial tone detection only in pulse dialing (DP) system 1 0 1 : 1 1 1 : } 2nd dial tone detection both in DP and push-button (PB) dialing system
4 | 6	Detection of international tone	No. 4 5 6 0 0 0 : 50 ms 0 0 1 : 210 ms 0 1 0 : 500 ms 0 1 1 : 800 ms 1 0 0 : 900 ms 1 0 1 : 1.5 sec. 1 1 0 : 2.0 sec. 1 1 1 : 2.5 sec.
7	No. of 2nd dial tone detection times	0: Once 1: Twice
8	2nd dial tone interrupt detecting time	0: 30 ms 1: 50 ms

NOTE: Selectors 4 through 8 are not applicable in those countries where no dial tone detection is supported, e.g., U.S.A.

- **Selectors 1 through 3: Pause key setting and 2nd dial tone detection**

Selectors			
1	2	3	
0	0	0	No WAIT is inserted even if the **Pause** key is pressed.
0	0	1	If you press the **Pause** key during dialing, the facsimile equipment will insert WAIT as defined in the above table. If the **Pause** key is pressed repeatedly, the equipment inserts the specified WAIT multiplied by the number of depressions. It applies also in hook-up dialing.
0	1	0	
0	1	1	
1	0	0	
1	0	1	When these selectors are set to "1, 0, 1": If you press the **Pause** key during dialing, the equipment will wait for the 2nd dial tone to be sent via the communications line. When these selectors are set to "1, 1, 0" or "1, 1, 1": If you press the **Pause** key during dialing, the equipment will first wait for the 2nd dial tone to be sent via the communications line. After that, the equipment will insert a WAIT of 3.5 seconds. If no 2nd dial tone is received within the specified time length (set by WSW08), the equipment will disconnect the line if in automatic dialing, or it will start transmitting the dial signal if given after depression of the **Pause** key in hook-up dialing. (In those countries where no dial tone detection function is supported, setting these selectors to "1, 1, 0," "1, 0, 1," or "1, 1, 1" inserts a WAIT of 3.5 seconds.)
1	1	0	
1	1	1	

- **Selectors 4 through 6: Detection of international tone**

  Upon detection of the 2nd dial tone for the time length specified by these selectors, the equipment starts dialing.

  This setting is effective only when the 2nd dial tone detection function is activated by selectors 1 through 3 (Setting 1 0 1, 1 1 0, or 1 1 1).

  This function does not apply in those countries where no dial tone detection function is supported.

- **Selector 7: No. of 2nd dial tone detection times**

  This selector sets the number of dial tone detection times required for starting dialing.

- **Selector 8: 2nd dial tone interrupt detecting time**

  This selector sets the allowable time length of an interrupt which should not be interpreted as an interrupt in the 2nd tone dialing.

WSW07 (Dial tone setting 1)

Selector No.	Function	Setting and Specifications
1 2	Frequency band range	No. 1 2 0 0 : Narrows by 10 Hz 0 1 : Initial value 1 X : Widens by 10 Hz
3	Line current detection	0: No 1: Yes
4 | 6	2nd dial tone detection level (Z = 600 Ω)	No. 4 5 6 0 0 0 : -21 dBm 0 0 1 : -24 dBm 0 1 0 : -27 dBm 0 1 1 : -30 dBm 1 0 0 : -33 dBm 1 0 1 : -36 dBm 1 1 0 : -39 dBm 1 1 1 : -42 dBm
7	1st dial tone interrupt detecting time	0: 30 ms 1: 50 ms
8	PABX loop current control	0: Disabled 1: Enabled

NOTE: The WSW07 is not applicable in those countries where no dial tone or line current detection is supported, e.g., U.S.A.

- **Selectors 1 and 2: Frequency band range**

  These selectors set the frequency band for the 1st dial tone and the busy tone (before dialing) to be detected.

  This setting is effective only when selectors 1 through 3 of WSW05 are set to "1,1,1."

- **Selector 3: Line current detection**

  This selector determines whether or not the equipment should detect a line current before starting dialing.

- **Selectors 4 through 6: 2nd dial tone detection level**

  These selectors set the detection level of the 2nd dial tone.

- **Selector 7: 1st dial tone interrupt detecting time**

  This selector sets the allowable time length of an interrupt which should not be interpreted as an interrupt in the 1st dial tone dialing.

- **Selector 8: PABX loop current control**

  This selector determines whether the PABX loop current control will be enabled or disabled. Setting this selector to "1" enables the loop current control that automatically switches the internal resistance inserted in series with the communications line on and off depending upon the loop current amount. Setting this selector to "0" disables the loop current control and keeps the internal resistance on.

  For some PABXs that are not compatible with the facsimile equipment in voltage rating, set this selector to "0."

  The setting made by this selector takes effect only when the user selects the PABX. If no PABX is selected, the PABX loop current control will be enabled independent of this setting.

WSW08 (Dial tone setting 2)

Selector No.	Function	Setting and Specifications
1 | 3	1st dial tone detection time length	No. 1 2 3 0 0 0 : 50 ms 0 0 1 : 210 ms 0 1 0 : 500 ms 0 1 1 : 800 ms 1 0 0 : 900 ms 1 0 1 : 1.5 sec. 1 1 0 : 2.0 sec. 1 1 1 : 2.5 sec.
4 5	Time-out length for 1st and 2nd dial tone detection	No. 4 5 0 0 : 10 sec. 0 1 : 20 sec. 1 0 : 15 sec. 1 1 : 30 sec.
6 | 8	Detection level of 1st dial tone and busy tone before dialing	No. 6 7 8 0 0 0 : -21 dBm 0 0 1 : -24 dBm 0 1 0 : -27 dBm 0 1 1 : -30 dBm 1 0 0 : -33 dBm 1 0 1 : -36 dBm 1 1 0 : -39 dBm 1 1 1 : -42 dBm

NOTE: The WSW08 is not applicable in those countries where no dial tone detection is supported, e.g., U.S.A.

- **Selectors 1 through 3: 1st dial tone detection time length**

  Upon detection of the 1st dial tone for the time length set by these selectors, the equipment starts dialing.

  This setting is effective only when selectors 1 through 3 of WSW05 are set to "1,1,1."

- **Selectors 4 and 5: Time-out length for 1st and 2nd dial tone detection**

  These selectors set the time-out length for the 1st and 2nd dial tone detection so that the equipment waits dial tone input for the specified time length and disconnects itself from the line when no dial tone is inputted.

WSW09 (Protocol definition 1)

Selector No.	Function	Setting and Specifications
1	Frame length selection	0: 256 octets 1: 64 octets
2	Use of non-standard commands	0: Allowed 1: Prohibited
3 4	No. of retries	No. 3 4 0 0 : 4 times 0 1 : 3 times 1 0 : 2 times 1 1 : 1 time
5	T5 timer	0: 300 sec. 1: 60 sec.
6	T1 timer	0: 35 sec. 1: 40 sec.
7 8	Elapsed time for time-out control for no response from the called station in automatic sending mode	No. 7 8 0 0 : 60 sec. 0 1 : 140 sec. (in the French versions) 70 sec. (in other versions) 1 0 : 90 sec. 1 1 : 35 sec.

NOTE: Selectors 1 through 5 are not applicable in those models which do not support ECM.

- **Selector 1: Frame length selection**

  Usually a single frame consists of 256 octets (1 octet = 8 bits). For communications lines with higher bit error rate, however, set selector 1 to "1" so that the facsimile equipment can divide a message into 64-octet frames.

  Remarks: The error correction mode (ECM) is a facsimile transmission manner in which the equipment divides a message into frames for transmission so that if any data error occurs on the transmission line, the equipment retransmits only those frames containing the error data.

- **Selector 2: Use of non-standard commands**

  If this selector is set to "0," the equipment may use non-standard commands (the machine’s native-mode commands, e.g., NSF, NSC, and NSS) for communications. If it is set to "1," the equipment will use standard commands only.

- **Selectors 3 and 4: No. of retries**

  These selectors set the number of retries in each specified modem transmission speed.

- **Selector 5: T5 timer**

  This selector sets the time length for the T5 timer.

- **Selector 6: T1 timer**

  This selector sets the time length for the T1 timer.

- **Selectors 7 and 8: Elapsed time for time-out control**

  If the equipment receives no response (no G3 command) from the called terminal in automatic sending during the time set by these selectors, it disconnects the line.

WSW10 (Protocol definition 2)

Selector No.	Function	Setting and Specifications
1	Switching of DPS, following the CML ON/OFF	0: No 1: Yes
2	Time length from transmission of the last dial digit to CML ON	0: 100 ms 1: 50 ms
3	Time length from CML ON to CNG transmission	0: 2 sec. 1: 4 sec.
4	Time length from CML ON to CED transmission (except for facsimile-to-telephone switching)	0: 0.5 sec. 1: 2 sec.
5 6	No. of training retries	No. 5 6 0 0 : 1 time 0 1 : 2 times 1 0 : 3 times 1 1 : 4 times
7 8	Not used.	

- **Selector 1: Switching of DPS, following the CML ON/OFF**

  Setting this selector to "1" automatically switches DPS following the CML ON/OFF operation.

- **Selector 2: Time length from transmission of the last dial digit to CML ON**

  This selector sets the time length from when the equipment transmits the last dial digit until the CML relay comes on.

- **Selector 3: Time length from CML ON to CNG transmission**

  This selector sets the time length until the equipment transmits a CNG after it turns on the CML relay.

- **Selector 4: Time length from CML ON to CED transmission**

  This selector sets the time length until the equipment transmits a CED after it turns on the CML relay. This setting does not apply to switching between facsimile and telephone.

- **Selectors 5 and 6: No. of training retries**

  These selectors set the number of training retries to be repeated before automatic fallback.

WSW11 (Busy tone setting)

Selector No.	Function	Setting and Specifications
1 2	Frequency band range	No. 1 2 0 0 : Narrows by 10 Hz 0 1 : Initial value 1 x : Widens by 10 Hz
3	Not used.	
4	ON/OFF time length ranges (More than one setting allowed)	1: 400-600/400-600 ms
5		1: 175-440/175-440 ms
6		1: 100-1000/17-660 ms
7		1: 110-410/320-550 ms
8		1: 100-660/100-660 ms

NOTE: WSW11 is not applicable in those countries where no busy tone detection is supported.

NOTE: The setting of WSW11 is effective only when selectors 5 and 6 of WSW05 are set to "0, 1" or "1, 1" (Busy tone detection).

- **Selectors 1 and 2: Frequency band range**

  These selectors set the frequency band for busy tone to be detected.

- **Selectors 4 through 8: ON/OFF time length ranges**

  These selectors set the ON and OFF time length ranges for busy tone to be detected. If more than one selector is set to "1," the ranges become wider. For example, if selectors 4 and 5 are set to "1," the ON and OFF time length ranges are from 175 to 600 ms.

WSW12 (Signal detection condition setting)

Selector No.	Function	Setting and Specifications
1 2	Min. OFF time length of calling signal (Ci)	No. 1 2 0 0 : 1500 ms 0 1 : 500 ms 1 0 : 700 ms 1 1 : 900 ms
3 4	Max. OFF time length of calling signal (Ci)	No. 3 4 0 0 : 6 sec. 0 1 : 7 sec. 1 0 : 9 sec. 1 1 : 11 sec.
5 6	Detecting time setting	No. 5 6 0 0 : 800 ms (1000 ms*) 0 1 : 200 ms 1 0 : 250 ms 1 1 : 150 ms
7	Delay	0: Yes 1: No
8	Not used.	

* 1000 ms in Chinese versions.

- **Selectors 1 through 4: Min. and max. OFF time length of calling signal (Ci)**

  If the equipment detects the OFF state of calling signal (Ci) for a time length which is greater than the value set by selectors 1 and 2 and less than the value set by selectors 3 and 4, it interprets the Ci signal as OFF.

- **Selectors 5 and 6: Detecting time setting**

  These selectors set the time length required to make the equipment acknowledge itself to be called. That is, if the equipment continuously detects calling signals with the frequency set by selectors 1 through 4 of WSW14 during the time length set by these selectors 5 and 6, it acknowledges the call.

- **Selector 7: Delay**

  Setting this selector to "0" allows the equipment to insert a 900 ms WAIT after acknowledgment of the call until the equipment turns on the CML relay to start receiving operation.

WSW13 (Modem setting)

Selector No.	Function	Setting and Specifications
1 2	Cable equalizer	No. 1 2 0 0 : 0 km 0 1 : 1.8 km 1 0 : 3.6 km 1 1 : 5.6 km
3 4	Reception level	No. 3 4 0 0 : -43 dBm 0 1 : -47 dBm 1 0 : -49 dBm 1 1 : -51 dBm
5 | 8	Modem attenuator	0: 0 dB 1: 8 dB 0: 0 dB 1: 4 dB 0: 0 dB 1: 2 dB 0: 0 dB 1: 1 dB

The modem should be adjusted according to the user's line conditions.

- **Selectors 1 and 2: Cable equalizer**

  These selectors are used to improve the pass-band characteristics of analogue signals on a line. (Attenuation in the high-band frequency is greater than in the low-band frequency.)

  Set these selectors according to the distance from the telephone switchboard to the facsimile equipment.

- **Selectors 3 and 4: Reception level**

  These selectors set the optimum receive signal level.

- **Selectors 5 through 8: Modem attenuator**

  These selectors are used to adjust the transmitting level of the modem when the reception level at the remote station is improper due to line loss. This function applies for G3 protocol signals.

  Setting two or more selectors to "1" produces addition of attenuation assigned to each selector.

  This setting will be limited if selector 8 of WSW23 is set to "0."

WSW14 (AUTO ANS facility setting)

Selector No.	Function	Setting and Specifications
1 2	Frequency band selection (Lower limit)	No. 1 2 0 0 : 13 Hz 0 1 : 15 Hz 1 0 : 23 Hz 1 1 : 20 Hz
3 4	Frequency band selection (Upper limit)	No. 3 4 0 0 : 30 Hz 0 1 : 55 Hz 1 X : 70 Hz
5 | 8	No. of rings in AUTO ANS mode	No. 5 6 7 8 0 0 0 0 : Fixed to once 0 0 0 1 : Fixed to 2 times 0 0 1 0 : Fixed to 3 times 0 0 1 1 : Fixed to 4 times 0 1 0 0 : 1 to 2 times 0 1 0 1 : 1 to 3 times 0 1 1 0 : 1 to 4 times 0 1 1 1 : 1 to 5 times 1 0 0 0 : 2 to 3 times 1 0 0 1 : 2 to 4 times 1 0 1 0 : 2 to 5 times 1 0 1 1 : 2 to 6 times 1 1 0 0 : 1 to 10 times 1 1 0 1 : 2 to 10 times 1 1 1 0 : 3 to 5 times 1 1 1 1 : 4 to 10 times

- **Selectors 1 through 4: Frequency band selection**

These selectors are used to select the frequency band of calling signals for activating the AUTO ANS facility.

In the French versions, if the user sets the PBX to OFF from the control panel, the setting made by selectors 1 and 2 will take no effect and the frequency's lower limit will be fixed to 32 Hz. (Even if the setting made by these selectors does not apply, it will be printed on the configuration list.)

- Selectors 5 through 8: No. of rings in AUTO ANS mode

These selectors set the number of rings to initiate the AUTO ANS facility.

WSW15 (REDIAL facility setting)

Selector No.	Function	Setting and Specifications
1 2	Selection of redial interval	No. 1 2 0 0 : 5 minutes 0 1 : 1 minute 1 0 : 2 minutes 1 1 : 3 minutes
3 | 6	No. of redialings	No. 3 4 5 6 0 0 0 0 : 16 times 0 0 0 1 : 1 times 0 0 1 0 : 2 times 0 0 1 1 : 3 times | | 1 1 1 1 : 15 times
7	Redialing for no response sent from the called terminal	0: Redialing 1: No redialing
8	Not used.	

- **Selectors 1 through 6: Selection of redial interval and No. of redialings**

  The equipment redials by the number of times set by selectors 3 through 6 at intervals set by selectors 1 and 2.

- **Selectors 7: Redialing for no response sent from the called terminal**

  This selector determines whether or not the equipment redials if no G3 command response comes from the called station after dialing within the time length set by selectors 7 and 8 of WSW09.

WSW16 (Function setting 1)

Selector No.	Function	Setting and Specifications	
1	Automatic cutter	0: ON	1: OFF
2	CCITT superfine recommendation	0: OFF	1: ON
3 | 6	Not used.		
7	Max. document length limitation	0: 400 cm	1: 90 cm
8	**Stop** key pressed during reception	0: Not functional	1: Functional

- **Selector 1: Automatic cutter**

  This selector activates or deactivates the automatic cutter.

- **Selector 2: CCITT superfine recommendation**

  If this selector is set to "1," the equipment communicates in CCITT recommended superfine mode (15.4 lines/mm). If it is set to "0," it communicates in native superfine mode.

- **Selector 7: Max. document length limitation**

  This selector is used to select the maximum length of a document to be sent.

- **Selector 8: Stop key pressed during reception**

  If this selector is set to "1," pressing the **Stop** key can stop the current receiving operation. The received data will be lost.

WSW17 (Function setting 2)

Selector No.	Function	Setting and Specifications
1 2	Off-hook alarm	No. 1 2 0 0 : No alarm 0 1 : Always valid 1 X : Valid except when 'call reservation' is selected.
3	Power failure report output	0: ON 1: OFF
4	Calendar clock/prompt alternate display	0: No 1: Yes
5	Calendar clock type	0: U.S.A. type 1: European type
6	Error indication in activity report	0: No 1: Yes
7	Non-ring reception	0: OFF 1: ON
8	Not used.	

NOTE: Selector 3 is not applicable to the U.S.A. versions.

- **Selectors 1 and 2: Off-hook alarm**

  These selectors activate or deactivate the alarm function which sounds an alarm when the communication is completed with the handset being off the hook.

- **Selector 3: Power failure report output**

  This selector determines whether or not the equipment outputs a power failure report when the power comes back on.

- **Selector 4: Calendar clock/prompt alternate display**

  If this selector is set to "1," the calendar clock and the prompt "INSERT DOCUMENT" appear alternately on the LCD while the equipment is on standby; if it is set to "0," only the calendar clock appears.

- **Selector 5: Calendar clock type**

  If this selector is set to "0" (USA), the MM/DD/YY hh:mm format applies; if it is set to "1" (Europe), the DD/MM/YY hh:mm format applies: DD is the day, MM is the month, YY is the last two digits of the year, hh is the hour, and mm is the minute.

- **Selector 6: Error indication in activity report**

  This selector determines whether or not a communications error code will be printed in the activity report.

- **Selector 7: Non-ring reception**

  Setting this selector to "1" makes the equipment receive calls without ringer sound if the ring delay is set to 0.

WSW18 (Function setting 3)

Selector No.	Function	Setting and Specifications
1	Not used.	
2 3	Detection enabled time for CNG and no tone	No. 2 3 0 0 : 40 sec. 0 1 : 0 sec. (No detection) 1 0 : 5 sec. 1 1 : 80 sec.
4	ACS* check sheet output function on/off key	0: Operative 1: Inoperative
5	ACS* check sheet output function	0: ON 1: OFF
6	Registration of station ID	0: Permitted 1: Prohibited
7 8	Tone sound monitoring	No. 7 8 0 X : No monitoring 1 0 : Up to phase B at the calling station only 1 1 : All transmission phases both at the calling and called stations

*ACS: Anti-curl system

- **Selectors 2 and 3: Detection enabled time for CNG and no tone**

  After the line is connected via the external telephone or by picking up the handset of the facsimile equipment, the equipment can detect a CNG signal or no tone for the time length specified by these selectors. The setting specified by these selectors becomes effective only when selector 8 of WSW20 is set to "1."

- **Selector 4: ACS check sheet output function on/off key**

  If this selector is set to "0" (Operative), the user can toggle the ACS check sheet output function on and off by pressing one-touch keys **01** and **05** simultaneously. If it is set to "1" (Inoperative), the user cannot toggle the ACS check sheet output function from the control panel so that the setting specified by selector 5 takes effect.

- **Selector 5: ACS check sheet output function**

  When selector 4 is set to "0," the setting specified by this selector becomes the default state of the ACS check sheet output function. When selector 4 is set to "1," the setting specified by this selector permanently takes effect.

- **Selector 6: Registration of station ID**

  Setting this selector to "0" permits the registration of station ID for Austrian and Czech versions.

- **Selectors 7 and 8: Tone sound monitoring**

  These selectors set monitoring specifications of the tone sound inputted from the line.

WSW19 (Transmission speed setting)

Selector No.	Function	Setting and Specifications
1 | 3	First transmission speed choice for fallback	No. 1 2 3 No. 4 5 6 0 0 0 : 2,400 bps 0 0 1 : 4,800 bps 0 1 0 : 7,200 bps 0 1 1 : 9,600 bps 1 0 0 : 12,000 bps * 1 0 1 : 1 1 0 : 14,400 bps * 1 1 1 :
4 | 6	Last transmission speed choice for fallback	
7	Not used.	
8	V. 17 mode	0: Permitted 1: Prohibited

- In those models with a maximum of 9600 bps capability, selection of 12,000 bps or 14,400 bps will still only produce a set speed automatically reduced to 9600 bps.

NOTE: Selector 8 is applicable only to those models that support 14,400 bps.

- **Selectors 1 through 6: First and last choices of transmission speed for fallback**

  These selectors are used to set the MODEM speed range. With the first transmission speed choice specified by selectors 1 through 3, the equipment attempts to synchronize the data transmission via the MODEM. If the synchronization fails, the equipment automatically steps down to the next lowest speed and attempts to synchronize the data transmission again. The equipment repeats this sequence while stepping down the transmission speed to the last choice specified by selectors 4 through 6.

  If the MODEM always falls back to a low transmission speed (e.g., 4,800 bps), set the first transmission speed choice to the lower one (e.g., modify it from 12,000 bps to 7,200 bps) in order to deactivate the high-speed MODEM function and reduce the training time for shorter transmission time.

  Generally, to save the transmission time, set the last transmission speed choice to a higher one.

WSW20 (Overseas communications mode setting)

Selector No.	Function	Setting and Specifications
1	EP* tone prefix	0: OFF 1: ON
2	Overseas communications mode (Reception)	0: 2100 Hz 1: 1100 Hz
3	Overseas communications mode (Transmission)	0: OFF 1: Ignores DIS once.
4 5	Min. time length from reception of CFR to start of transmission of video signals	No. 4 5 0 0 : 100 ms 0 1 : 200 ms 1 0 : 300 ms 1 1 : 400 ms
6 7	Chattering elimination for CNG detection	No. 6 7 0 0 : A (During CNG ON and OFF) 0 1 : B (During CNG OFF only) 1 X : C (No elimination)
8	CNG detection on/off	0: OFF 1: ON

* EP: Echo protection

- **Selector 1: EP tone prefix**

Setting this selector to "1" makes the equipment transmit a 1700 Hz echo protection (EP) tone immediately preceding training in V.29 modulation system to prevent omission of training signals.

Prefixing an EP tone is effective when the equipment fails to transmit at the V.29 modem speed and always has to fall back to 4800 bps transmission.

- **Selectors 2 and 3: Overseas communications mode**

These selectors should be used if the facsimile equipment malfunctions in overseas communications. According to the communications error state, select the signal specifications.

Setting selector 2 to "1" allows the equipment to use 1100 Hz CED signal instead of 2100 Hz in receiving operation. This prevents malfunctions resulting from echoes, since the 1100 Hz signal does not disable the echo suppressor (ES) while the 2100 Hz signal does.

Setting selector 3 to "1" allows the equipment to ignore a DIS signal sent from the called station once in sending operation. This operation suppresses echoes since the first DIS signal immediately follows a 2100 Hz CED (which disables the ES) so that it is likely to be affected by echoes in the disabled ES state. However, such a disabled ES state will be removed soon so that the second and the following DIS signals are not susceptible to data distortion due to echoes. Note that some models when called may cause error by receiving a self-outputted DIS.

- **Selectors 8: CNG detection on/off**

If this selector is set to "1," the equipment detects a CNG signal according to the condition preset by selectors 2 and 3 of WSW18 after a line is connected. If it is set to "0," the equipment detects a CNG signal as long as the line is connected.

WSW21 (TAD setting 1)

Selector No.	Function	Setting and Specifications
1 | 5	Max. waiting time for voice signal	No. 1 2 3 4 5 0 0 0 0 0 : No detection 0 0 0 0 1 : 1 sec. 0 0 0 1 0 : 2 sec. 0 0 0 1 1 : 3 sec. | | 0 1 0 0 0 : 8 sec. | | 1 1 1 1 1 : 31 sec.
6 7	Two-way recording	No. 6 7 0 0 : For U.S.A. (A) 0 1 : Except for U.S.A. (B) 1 0 : Without beep (C) 1 1 : OFF (D)
8	Erasure of message stored in the memory after the message transfer	0: Yes 1: No

NOTE: Selectors 1 through 8 are applicable to those models equipped with a built-in TAD.

- **Selectors 1 through 5: Max. waiting time for voice signal**

  In the TAD mode, the equipment waits for voice signal for the time length specified by these selectors before it automatically shifts to the facsimile message receive mode or disconnects the line.

- **Selectors 6 and 7: Two-way recording**

  These selectors select the specifications of the two-way recording feature.

- **Selector 8: Erasure of message**

  Setting this selector to "0" will erase the message recorded in the memory after the document retrieval feature transfers the message.

WSW22 (ECM)

Selector No.	Function	Setting and Specifications
1	ECM* in sending	0: ON 1: OFF
2	ECM* in receiving	0: ON 1: OFF
3 4	Not used.	
5 | 8	Acceptable TCF bit error rate (%) (Only at 4800 bps)	0: 0% 1: 8% 0: 0% 1: 4% 0: 0% 1: 2% 0: 0% 1: 1%

* ECM: Error correction mode

NOTE: Selectors 5 through 8 are applicable to the Chinese, Taiwanese and Asian versions only.

- **Selectors 5 through 8: Acceptable TCF bit error rate (%)**

  Setting two or more selectors to "1" produces addition of percent assigned to each selector. If you set selectors 7 and 8 to "1," the acceptable TCF bit error rate will be 3%.

WSW23 (Communications setting)

Selector No.	Function	Setting and Specifications
1	Starting point of training check (TCF)	0: From the head of a series of zeros 1: From any arbitrary point
2 3	Allowable training error rate	No. 2 3 0 0 : 0% 0 1 : 0.5% 1 0 : 1% 1 1 : 2%
4 5	Decoding error rate for transmission of RTN	No. 4 5 0 0 : 16% 0 1 : 14% 1 0 : 10% 1 1 : 8%
6 7	Not used.	
8	Limitation of attenuation level	0: Yes 1: No

NOTE: Selector 8 is not applicable to the French and Chinese versions.

- **Selector 1: Starting point of training check (TCF)**

  At the training phase of receiving operation, the called station detects for 1.0 second a training check (TCF) command, a series of zeros which is sent from the calling station for 1.5 seconds to verify training and give the first indication of the acceptability of the line.

  This selector sets the starting point from which the called station should start counting those zeros. If this selector is set to "0," the called station starts counting zeros 100 ms after the head of a series of zeros is detected.

  If it is set to "1," the called station starts counting zeros upon detection of 10-ms successive zeros 50 ms after the head of a series of zeros is detected. In this case, if the detection of 10-ms successive zeros is too late, the data counting period will become less than 1.0 second, making the called station judge the line condition unacceptable.

- **Selectors 2 and 3: Allowable training error rate**

  The called station checks a series of zeros gathered in training (as described in Selector 1) according to the allowable training error rate set by these selectors. If the called station judges the line condition to be accepted, it responds with CFR; if not, it responds with FTT.

- **Selectors 4 and 5: Decoding error rate for transmission of RTN**

  The facsimile equipment checks the actual decoding errors and then transmits an RTN according to the decoding error rate (Number of lines containing an error per page ÷ Total number of lines per page) set by these selectors.

- **Selector 8: Limitation of attenuation level**

  Setting this selector to "0" limits the transmitting level of the modem to 10 dB.

  This setting has priority over the settings selected by WSW02 (selectors 5 through 8) and WSW13 (selectors 5 through 8).

WSW24 (TAD setting 2)

Selector No.	Function	Setting and Specifications
1 2	Maximum OGM recording time	No. 1 2 0 0 : 15 sec. 0 1 : 20 sec. 1 0 : 30 sec. 1 1 : 50 sec.
3 4	Time length from CML ON to start of pseudo ring backtone transmission	No. 3 4 0 0 : 4 sec. 0 1 : 3 sec. 1 0 : 2 sec. 1 1 : 1 sec.
5 | 8	Attenuator for playback of ICM/ OGM to the line (Selectable from the range of 0-15 dB)	0: 0 dB 1: 8 dB 0: 0 dB 1: 4 dB 0: 0 dB 1: 2 dB 0: 0 dB 1: 1 dB

NOTE: Selectors 1 and 2 are applicable to those models equipped with a built-in TAD.

- **Selectors 1 and 2: Maximum OGM recording time**

  These selectors set the allowable maximum recording time for an OGM.

- **Selectors 3 and 4: Time length from CML ON to start of pseudo ring backtone transmission**

  These selectors set the length of time from CML-ON up to the start of pseudo ring backtone transmission.

  In those versions which have an OGM facility, the settings made by these selectors also apply to the length of time from CML-ON up to the start of OGM transmission.

- **Selectors 5 through 8: Attenuator for playback of ICM/OGM to the line**

  Setting two or more selectors to "1" produces addition of attenuation assigned to each selector.

  This setting will not be limited by selector 8 of WSW23.

WSW25 (TAD setting 3)

Selector No.	Function	Setting and Specifications
1 | 4	Not used.	
5 | 7	Pause between paging number and PIN	No. 5 6 7 0 0 0 : 2 sec. 0 0 1 : 4 sec. 0 1 0 : 6 sec. 0 1 1 : 8 sec. 1 0 0 : 10 sec. 1 0 1 : 12 sec. 1 1 0 : 14 sec. 1 1 1 : 16 sec.
8	Not used.	

NOTE: Selectors 5 through 7 are applicable to the U.S.A. and Canadian versions of the FAX355MC/ FAX375MC.

- **Selectors 5 through 7: Pause between paging number and PIN**

  These selectors set the pause time between a telephone number being paged and PIN (private identification number) for the paging feature.

WSW26 (Function setting 4)

Selector No.	Function	Setting and Specifications
1	Application of DC wetting pulse	0: OFF 1: ON
2	Overvoltage limiter at the applying time of a wetting pulse	0: ON 1: OFF
3	Not used.	
4 5	No. of CNG cycles to be detected (when the line is connected via the external telephone except in the external TAD mode)	No. 4 5 0 0 : 0.5 (A) 0 1 : 1 (B) 1 0 : 1.5 (C) 1 1 : 2 (D)
6 7	No. of CNG cycles to be detected (when the line is connected via the external telephone in the external TAD mode or via the facsimile equipment in F/T mode)	No. 6 7 0 0 : 0.5 (A) 0 1 : 1 (B) 1 0 : 1.5 (C) 1 1 : 2 (D)
8	FAX reception after the time-out of pseudo ring backtones in F/T mode	0: Yes 1: No

NOTE: Selectors 1 and 2 are not applicable to the German versions.
NOTE: Selectors 6 and 7 are not applicable to those models equipped with a built-in TAD.

- **Selectors 1 and 2: Application of DC wetting pulse and overvoltage limiter**

  These selectors take effect only when the UK version of the facsimile equipment is set up for the British Telecom’s caller ID service or its equivalent.

  Selector 2 takes effect only when selector 1 is set to "1."

- **Selectors 4 and 5: No. of CNG cycles to be detected**

  The equipment interprets a CNG as an effective signal if it detects a CNG signal by the number of cycles specified by these selectors when the line is connected via the external telephone except in the external TAD mode.

- **Selectors 6 and 7: No. of CNG cycles to be detected**

  The equipment interprets a CNG as an effective signal if it detects a CNG signal by the number of cycles specified by these selectors when the line is connected via the external telephone in the external TAD mode or via the facsimile equipment in F/T mode.

- **Selector 8: FAX reception after the time-out of pseudo ring backtones in F/T mode**

  If this selector is set to "0," the equipment starts receiving FAX messages when it receives a CNG signal within 10-second no-tone period provided after the time-out of pseudo ring backtones. If no CNG is received within the period, the equipment disconnects the line.

  If this selector is set to "1," the equipment disconnects the line after issuing pseudo ring backtones.

WSW27 (Function setting 5)

Selector No.	Function	Setting and Specifications
1	Definition of programmable key	0: TEL key 1: TEL/POLLING key
2	Ringer OFF setting	0: Yes 1: No
3	Automatic playback of OGM at the start time of OGM ON mode	0: No 1: Yes
4	Detection of distinctive ringing pattern	0: Yes 1: No
5 | 7	Not used.	
8	Motor overheating error indication	0: No 1: Yes

NOTE: Selector 1 is not applicable to the U.S.A. versions.
NOTE: Selectors 3 and 6 are applicable to those models equipped with a built-in TAD.

- **Selector 1: Definition of programmable key**

  This selector defines a programmable key as a TEL key or TEL/POLLING key.

  Setting this selector to "1" allows the programmable key to function as either a TEL or POLLING key if pressed when the handset is off or on the hook, respectively.

  This setting is effective only for those models having a programmable key.

- **Selector 2: Ringer OFF setting**

  This selector determines whether or not the ringer can be set to OFF.

- **Selector 3: Automatic playback of OGM at the start time of OGM ON mode**

  This selector determines whether or not the equipment automatically plays back an OGM the moment it switches to the OGM ON mode in the MC mode.

- **Selector 4: Detection of distinctive ringing pattern**

  If this selector is set to "1," the equipment detects only the number of rings; if it is set to "0," the equipment detects the number of rings and the ringing time length to compare the detected ringing pattern with the registered distinctive one.

- **Selector 8: Motor overheating error indication**

  If this selector is set to "0," the equipment displays the message "PRINTER FAULT" on the LCD whenever a motor overheating error occurs so that any of the following happens and the equipment aborts recording:

  - The number of printed documents is five or less although the receiving operation continues for 15 minutes or more.
  - The umber of printed documents is 10 or less although the receiving operation continues for 20 minutes or more.

WSW28 (Function setting 6)

Selector No.	Function	Setting and Specifications
1 | 3	Transmission level of DTMF high-band frequency signal	No. 1 2 3 0 0 0 : 0 dB 0 0 1 : +1 dB 0 1 0 : +2 dB 0 1 1 : +3 dB 1 0 0 : 0 dB 1 0 1 : -1 dB 1 1 0 : -2 dB 1 1 1 : -3 dB
4 | 6	Transmission level of DTMF low-band frequency signal	No. 4 5 6 0 0 0 : 0 dB 0 0 1 : +1 dB 0 1 0 : +2 dB 0 1 1 : +3 dB 1 0 0 : 0 dB 1 0 1 : -1 dB 1 1 0 : -2 dB 1 1 1 : -3 dB
7 8	Not used.	

- **Selectors 1 through 6: Transmission level of DTMF high-/low-band frequency signal**

  These selectors are intended for the manufacturer who tests the equipment for the Standard. Never access them.

WSW29 (Function setting 7)

Selector No.	Function	Setting and Specifications
1 | 3	Compression threshold level for voice signals inputted via the telephone line in the built-in TAD operation	No. 1 2 3 0 0 0 : -47.0 dBm (A) 0 0 1 : -48.5 dBm (B) 0 1 0 : -50.0 dBm (C) 0 1 1 : -51.5 dBm (D) 1 0 0 : -53.0 dBm (E) 1 0 1 : -54.5 dBm (F) 1 1 0 : -56.0 dBm (G) 1 1 1 : OFF (H)
4 | 6	Compression threshold level for voice signals inputted via the handset in the built-in TAD operation	No. 4 5 6 0 0 0 : -44.0 dBm (A) 0 0 1 : -45.5 dBm (B) 0 1 0 : -47.0 dBm (C) 0 1 1 : -48.5 dBm (D) 1 0 0 : -50.0 dBm (E) 1 0 1 : -51.5 dBm (F) 1 1 0 : -53.0 dBm (G) 1 1 1 : OFF (H)
7	Not used.	
8	Prompt beep for activity report	0: No 1: Yes

NOTE: Selectors 1 through 6 are applicable to those models equipped with a built-in TAD.

NOTE: Selector 8 is not applicable to the U.S.A. versions.

- **Selectors 1 through 6: Compression threshold level for voice signals inputted via the telephone line in the built-in TAD operation**

  If voice signals inputted via the telephone line are below the level specified by these selectors, the TAD interprets those received voice signals as no signal, compressing the recording time.

- **Selector 8: Prompt beep for activity report**

  This selector determines whether or not the equipment will beep if the activity report memory area becomes full with 30 records, for prompting you to print out the report. (Printing it out will clear the memory area.)

WSW30 (Function setting 8)

Selector No.	Function	Setting and Specifications
1 | 3	Detection level of dial tone or busy tone for the built-in TAD operation	No. 1 2 3 0 0 0 : -38.0 dBm (A) 0 0 1 : -39.5 dBm (B) 0 1 0 : -41.0 dBm (C) 0 1 1 : -42.5 dBm (D) 1 0 0 : -44.0 dBm (E) 1 0 1 : -45.5 dBm (F) 1 1 0 : -47.0 dBm (G) 1 1 1 : -48.5 dBm (H)
4 | 8	Not used.	

NOTE: Selectors 1 through 3 are applicable to those models equipped with a built-in TAD.

- **Selectors 1 through 3: Detection level of dial tone or busy tone for built-in TAD operation**

  If dial tone or busy tone inputted during ICM recording is below the level specified by these selectors, the TAD stops recording and disconnects the line.

WSW31 (Function setting 9)

Selector No.	Function	Setting and Specifications
1 | 4	Not used.	
5	Minimum short-OFF duration in distinctive ringing	0: 130 ms 1: 90 ms
6 | 8	Not used.	

NOTE: Selector 5 is applicable in those areas where the distinctive ringing is supported.

- **Selector 5 Minimum short-OFF duration in distinctive ringing**

  The ringer pattern consists of short and long rings, e.g., short-short-long rings. This selector sets the minimum OFF duration following a short ring in order to avoid missing ringer tones in distinctive ringing.

  If this selector is set to "1," when the short-OFF duration is a minimum of 90 ms long, then the equipment will interpret the short-OFF as OFF.

WSW32 (Function setting 10)

Selector No.	Function	Setting and Specifications
1 | 4	Not used.	
5 6	Default resolution	No. 5 6 0 0 : Standard 0 1 : Fine 1 0 : Super fine 1 1 : Photo
7 8	Default contrast	No. 7 8 0 X : Automatic 1 0 : Super light 1 1 : Super dark

NOTE: Selectors 5 through 8 are applicable to those models equipped with a built-in TAD.

- **Selectors 5 and 6 Default resolution**

  These selectors set the default resolution which applies when the equipment is powered up or completes a transaction.

- **Selectors 7 and 8 Default contrast**

  These selectors set the default contrast which applies when the equipment is powered up or completes a transaction.

WSW33 (Function setting 11)

Selector No.	Function	Setting and Specifications
1 | 3	Detection threshold level for voice signals inputted via the telephone line in the built-in TAD operation	No. 1 2 3 0 0 0 : -42.5 dBm (A) 0 0 1 : -44.0 dBm (B) 0 1 0 : -45.5 dBm (C) 0 1 1 : -47.0 dBm (D) 1 0 0 : -48.5 dBm (E) 1 0 1 : -50.0 dBm (F) 1 1 0 : -51.5 dBm (G) 1 1 1 : -53.0 dBm (H)
4 5	FAX receiving speed to be kept within the transmission speed limit to the PC	No. 4 5 0 0 : 14,400 bps 0 1 : 12,000 bps 1 0 : 9,600 bps 1 1 : 7,200 bps
6	Report output of polled transmission requests	0: Yes 1: No
7 8	Comfortable noise level	No. 7 8 0 0 : OFF 0 1 : Low (A) 1 0 : Medium (B) 1 1 : High (C)

NOTE: WSW33 is applicable to those models equipped with a built-in TAD.

NOTE: Selector 6 is not applicable to the U.S.A. versions.

- **Selectors 1 through 3: Detection threshold level for voice signals inputted via the telephone line in the built-in TAD operation**

  If the equipment detects voice signals exceeding the threshold level set by these selectors, it will interpret them as effective voice.

- **Selectors 4 and 5: FAX receiving speed to be kept within the transmission speed limit to the PC**

  To transmit FAX data being received from other facsimile equipment to the connected PC, you may need to keep the FAX receiving speed within the transmission speed limit to the PC. In an initial negotiation sequence for transmission, the equipment responds to the calling station with the allowable FAX receiving speed specified by these selectors.

- **Selectors 7 and 8: Comfortable noise level**

  These selectors set the level of noise to be added during playing-back of voice signals recorded with no-signal compression.

  If they are set to "0, 0," no noise will be added.

WSW34 (Function setting 12)

Selector No.	Function	Setting and Specifications
1 | 3	Erasing time length of ICM tone recorded preceding the tone detection starting point in the case of automatic line disconnection due to no voice signal received	No. 1 2 3 0 0 0 : 0 sec. 0 0 1 : 1 sec. 0 1 0 : 2 sec. 0 1 1 : 3 sec. 1 0 0 : 4 sec. 1 0 1 : 5 sec. 1 1 0 : 6 sec. 1 1 1 : 7 sec.
4 5	No. of CNG cycles to be detected (when the line is connected via the external telephone in the external TAD mode or via the facsimile equipment in F/T or TAD mode)	No. 4 5 0 0 : 0.5 (A) 0 1 : 1 (B) 1 0 : 1.5 (C) 1 1 : 2 (D)
6 7	Number of DTMF tone signals for inhibiting the detection of CNG during external TAD operation	No. 6 7 0 0 : 3 0 1 : 2 1 0 : 1 1 1 : OFF
8	Not used.	

NOTE: Selectors 1 through 5 are applicable to those models equipped with a built-in TAD.

- **Selectors 1 through 3: Erasing time length of ICM tone recorded preceding the tone detection starting point in the case of automatic line disconnection due to no voice signal received**

  If the equipment has disconnected the line after detection of disconnection tone in ICM recording, it erases tone recorded preceding the tone detection starting point for the time length set by these selectors.

- **Selectors 4 and 5: No. of CNG cycles to be detected**

  The equipment interprets a CNG as an effective signal if it detects a CNG signal by the number of cycles specified by these selectors in any of the following cases:

  - when the line is connected via the external telephone in the external TAD mode.
  - when the line is connected via the facsimile equipment in F/T or TAD mode.

- **Selectors 6 and 7: Number of DTMF tone signals for inhibiting the detection of CNG during external TAD operation**

  If the equipment receives this specified number of DTMF tone signals during external TAD operation, it will not detect CNG afterwards.

  If these selectors are set to "1, 1," the CNG detection will not be inhibited.

WSW35 (Function setting 13)

Selector No.	Function	Setting and Specifications
1 | 4	Detection time length of the disconnection tone in ICM recording	No. 1 2 3 4 0 0 0 0 : No detection 0 0 0 1 : 1 sec. 0 0 1 0 : 2 sec. 0 1 0 0 : 4 sec. | | 1 1 1 1 : 15 sec.
5 | 8	Not used.	

NOTE: Selectors 1 through 4 are applicable to those models equipped with a built-in TAD.

- **Selectors 1 through 4: Detection time length of the disconnection tone in ICM recording**

  If the equipment detects disconnection tone for the time length set by these selectors, it will disconnect the line.

WSW36 (Function setting 14)

Selector No.	Function	Setting and Specifications
1 | 5	Not used.	
6 | 8	Lower limit of frequency to be ignored after detection of calling signals (Ci)	No. 6 7 8 0 0 0 : 0 (Not ignored) 0 0 1 : 4 (448 Hz) 0 1 0 : 8 (244 Hz) 0 1 1 : 12 (162 Hz) 1 0 0 : 16 (122 Hz) 1 0 1 : 20 (97 Hz) 1 1 0 : 24 (81 Hz) 1 1 1 : 28 (69 Hz)

- **Selectors 6 through 8: Lower limit of frequency to be ignored after detection of calling signals (Ci)**

  At the start of reception, if the equipment detects the frequency of calling signals (Ci) specified by selectors 1 through 4 of WSW14, it will start the ringer sounding. When doing so, the equipment may fail to detect the calling signals normally due to noises superimposed at the time of reception. To prevent it, use selectors 6 through 8 of WSW36.

  If the equipment detects higher frequencies than the lower limit specified by these selectors, it will regard them as noise and interpret that detecting state as being normal, allowing the ringer to keep sounding (until the equipment starts automatic reception of FAX data if in the FAX mode or enters the TAD mode if set in the TEL mode, according to the preset number of ringers).

WSW37 (Function setting 15)

Selector No.	Function	Setting and Specifications
1 | 8	Not used.	

[B] Printout of firmware switch data

n Function

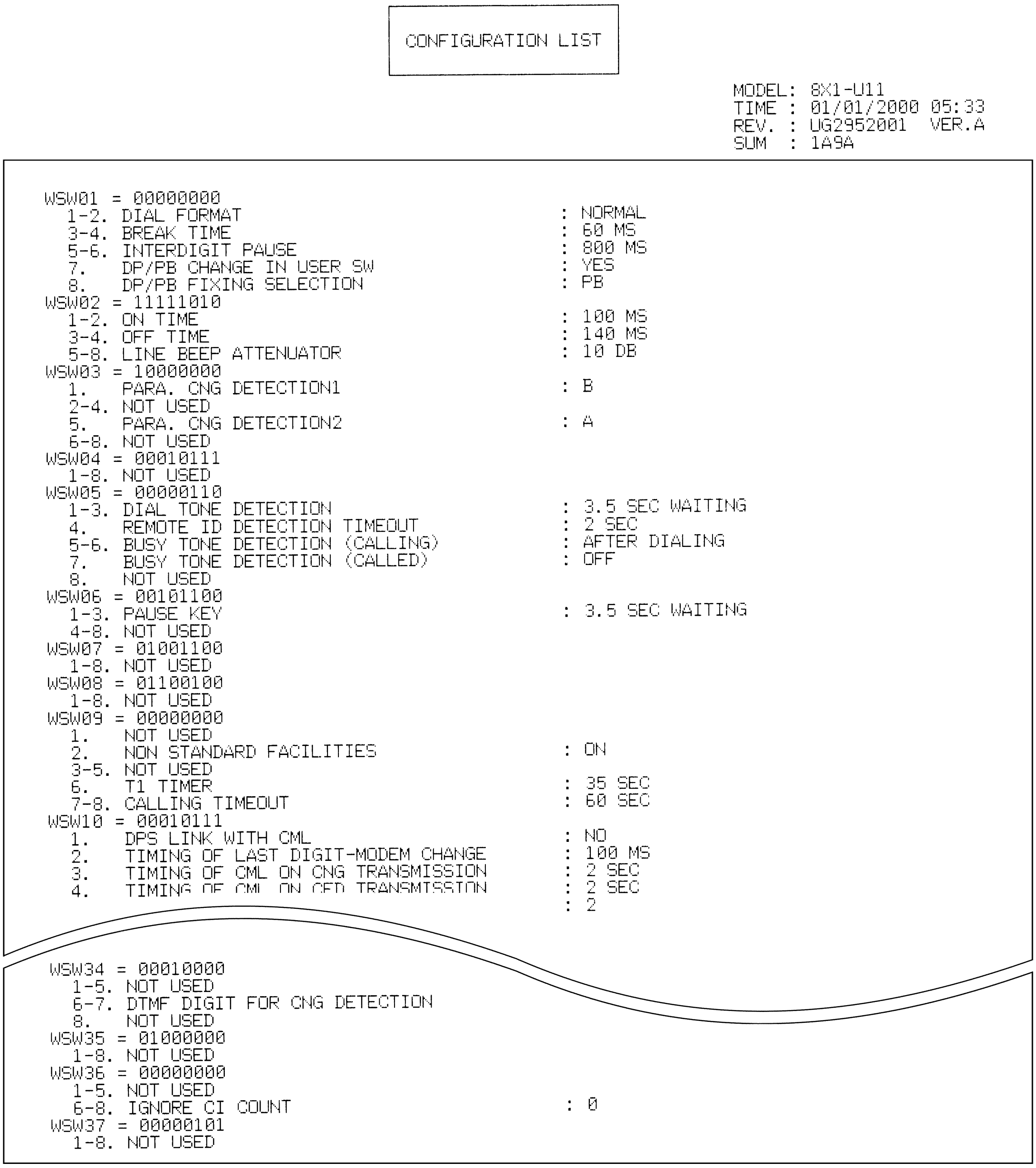
The equipment prints out the setting items and contents specified by the firmware switches.

n Operating Procedure

(1) Press the **1** key twice in the initial stage of the maintenance mode.
The "PRINTING" will appear on the LCD.

(2) The equipment prints out the configuration list as shown in the figure below.

(3) Upon completion of printing, the equipment returns to the initial stage of the maintenance mode.



```
                         CONFIGURATION LIST

                                                  MODEL: 8X1-U11
                                                  TIME : 01/01/2000 05:33
                                                  REV. : UG2952001  VER.A
                                                  SUM  : 1A9A

WSW01 = 00000000
  1-2. DIAL FORMAT                       : NORMAL
  3-4. BREAK TIME                        : 60 MS
  5-6. INTERDIGIT PAUSE                  : 800 MS
  7.   DP/PB CHANGE IN USER SW           : YES
  8.   DP/PB FIXING SELECTION            : PB
WSW02 = 11111010
  1-2. ON TIME                           : 100 MS
  3-4. OFF TIME                          : 140 MS
  5-8. LINE BEEP ATTENUATOR              : 10 DB
WSW03 = 10000000
  1.   PARA. CNG DETECTION1              : B
  2-4. NOT USED
  5.   PARA. CNG DETECTION2              : A
  6-8. NOT USED
WSW04 = 00010111
  1-8. NOT USED
WSW05 = 00000110
  1-3. DIAL TONE DETECTION               : 3.5 SEC WAITING
  4.   REMOTE ID DETECTION TIMEOUT       : 2 SEC
  5-6. BUSY TONE DETECTION (CALLING)     : AFTER DIALING
  7.   BUSY TONE DETECTION (CALLED)      : OFF
  8.   NOT USED
WSW06 = 00101100
  1-3. PAUSE KEY                         : 3.5 SEC WAITING
  4-8. NOT USED
WSW07 = 01001100
  1-8. NOT USED
WSW08 = 01100100
  1-8. NOT USED
WSW09 = 00000000
  1.   NOT USED
  2.   NON STANDARD FACILITIES           : ON
  3-5. NOT USED
  6.   T1 TIMER                          : 35 SEC
  7-8. CALLING TIMEOUT                   : 60 SEC
WSW10 = 00010111
  1.   DPS LINK WITH CML                 : NO
  2.   TIMING OF LAST DIGIT-MODEM CHANGE : 100 MS
  3.   TIMING OF CML ON CNG TRANSMISSION : 2 SEC
  4.   TIMING OF CML ON CED TRANSMISSION : 2 SEC
                                         : 2

WSW34 = 00010000
  1-5. NOT USED
  6-7. DTMF DIGIT FOR CNG DETECTION
  8.   NOT USED
WSW35 = 01000000
  1-8. NOT USED
WSW36 = 00000000
  1-5. NOT USED
  6-8. IGNORE CI COUNT                   : 0
WSW37 = 00000101
  1-8. NOT USED
```

Configuration List

3.6 Operational Check of LCD

n Function

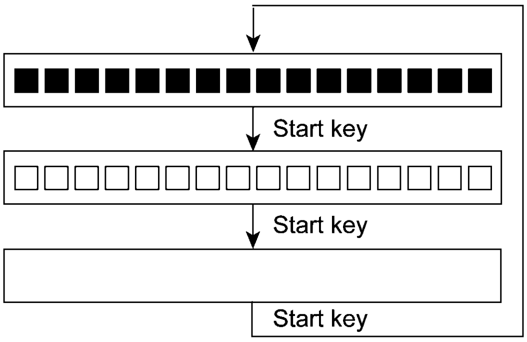
This function allows you to check whether the LCD on the control panel works normally.

n Operating Procedure

(1) Press the **1** and **2** keys in this order in the initial stage of the maintenance mode.

The LCD shows

(2) Press the **Start** key. Each time you press the **Start** key, the LCD cycles through the displays shown at right.



(3) Press the **Stop** key in any process of the above display cycle. The equipment beeps for one second and returns to the initial stage of the maintenance mode.

3.7 Operational Check of Control Panel PCB

n Function

This function allows you to check the control panel PCB for normal operation.

n Operating Procedure

(1) Press the **1** and **3** keys in this order in the initial stage of the maintenance mode.

The "00   " will appear on the LCD.

(2) Press the keys and buttons in the order designated in the illustration shown below.

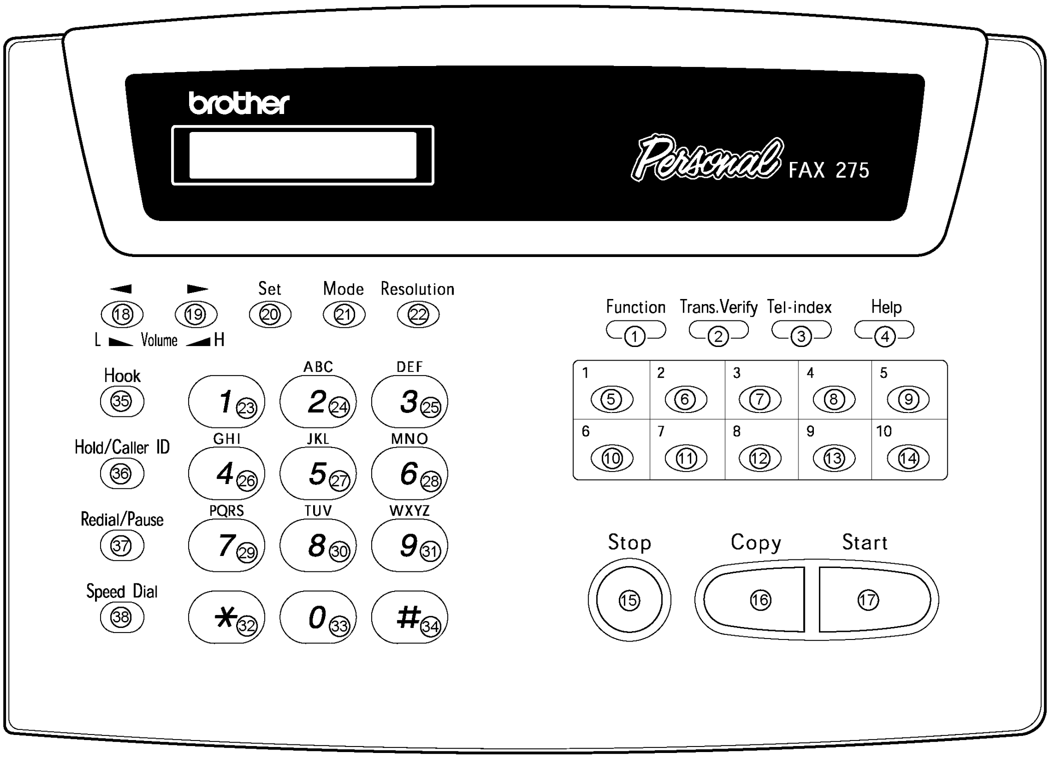
The LCD shows the corresponding number in decimal notation each time a key or button is pressed. Check that the displayed number is correct by referring to the illustration below.

If a key or button is pressed out of order, the equipment beeps and displays the "INVALID OPERATE" on the LCD. To return to the status ready to accept key & button entry for operational check, press the **Stop** key.

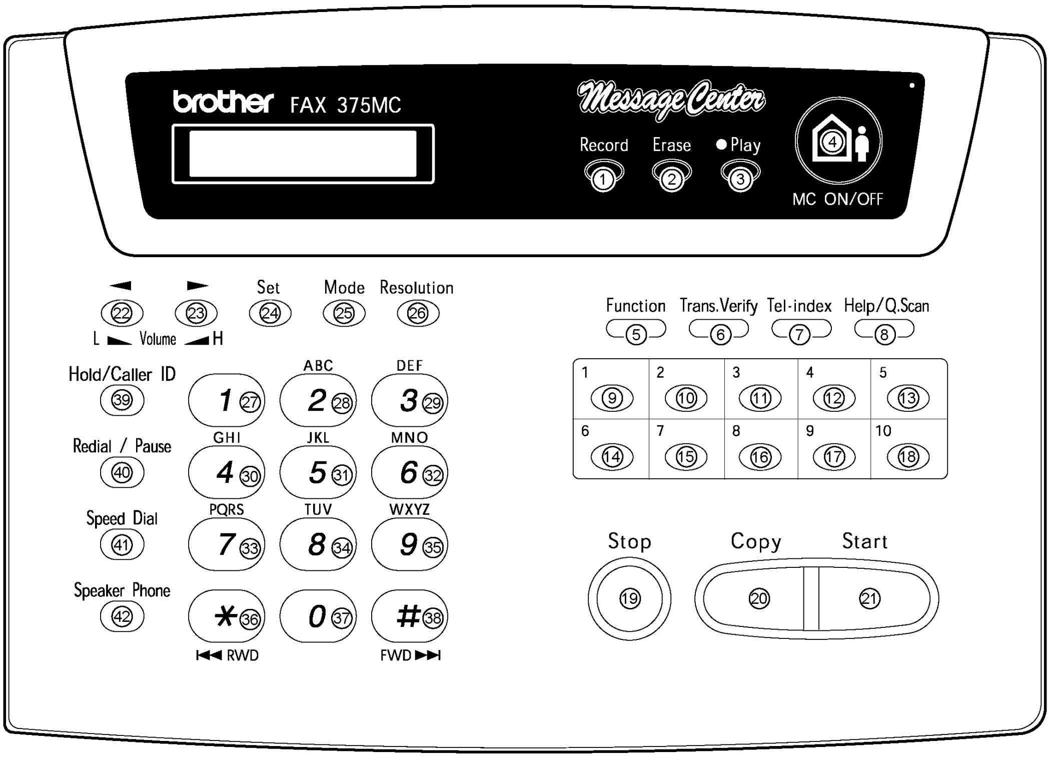
(3) After the last number key or button is pressed, the equipment beeps and returns to the initial stage of the maintenance mode.

To terminate this operation, press the **Stop** key. The equipment returns to the initial stage of the maintenance mode.

FAX255/FAX275/FAX-515/HOMEFAX3


brother
Personal FAX 275
◄ ⑱
► ⑲
Set ⑳
Mode ㉑
Resolution ㉒
L Volume H
Function ①
Trans.Verify ②
Tel-index ③
Help ④
1 ⑤
2 ⑥
3 ⑦
4 ⑧
5 ⑨
6 ⑩
7 ⑪
8 ⑫
9 ⑬
10 ⑭
Hook ㉟
1 ㉓
ABC 2 ㉔
DEF 3 ㉕
Hold/Caller ID ㊱
GHI 4 ㉖
JKL 5 ㉗
MNO 6 ㉘
Redial/Pause ㊲
PQRS 7 ㉙
TUV 8 ㉚
WXYZ 9 ㉛
Speed Dial ㊳
* ㉜
0 ㉝
# ㉞
Stop ⑮
Copy ⑯
Start ⑰

FAX355MC/FAX375MC/FAX-525DT/FAX-525MC


brother FAX 375MC
Message Center
Record ①
Erase ②
● Play ③
④ MC ON/OFF
◄ ㉒
► ㉓
Set ㉔
Mode ㉕
Resolution ㉖
L Volume H
Function ⑤
Trans.Verify ⑥
Tel-index ⑦
Help/Q.Scan ⑧
1 ⑨
2 ⑩
3 ⑪
4 ⑫
5 ⑬
6 ⑭
7 ⑮
8 ⑯
9 ⑰
10 ⑱
Hold/Caller ID ㊴
1 ㉗
ABC 2 ㉘
DEF 3 ㉙
Redial / Pause ㊵
GHI 4 ㉚
JKL 5 ㉛
MNO 6 ㉜
Speed Dial ㊶
PQRS 7 ㉝
TUV 8 ㉞
WXYZ 9 ㉟
Speaker Phone ㊷
* ㊱
0 ㊲
# ㊳
◄◄ RWD
FWD ►►
Stop ⑲
Copy ⑳
Start ㉑

Key & Button Entry Order

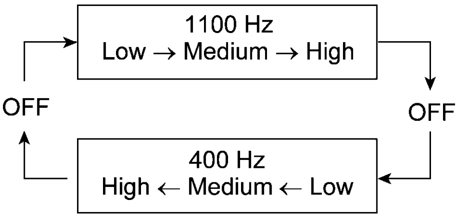
3.8 Sensor Operational Check

n Function

This function allows you to check that the six sensors (document front sensor, document rear sensor, cover sensor, paper empty (PE) sensor, cutter home position (HP) sensor, and hook switch sensor) operate correctly.

n Operating Procedure

(1) Press the **3** and **2** keys in this order in the initial stage of the maintenance mode. The equipment sounds 1100 Hz and 400 Hz tones cyclically through the following volumes for testing the speaker.



To disable the speaker, press the **Function** key (FAX255/FAX275/FAX355MC/FAX375MC) or **Menu** key (FAX-515/FAX-525DT/FAX-525MC/HOMEFAX3). With the key, you may toggle the speaker on and off.

If the sensing status are as listed below, the LCD will show the following:

FRE RC PE CHK

Given below is the relationship between the LCD indication, sensor name and sensor status.

LCD	Sensors	Sensing status
FRE	Document front and rear sensors	No document detected.
RC	Cover sensor	Recording paper cover ASSY closed.
PE	PE sensor	Recording paper loaded.
CH	Cutter HP sensor	Cutter placed in the home position.
K	Hook switch sensor	On-hook state.

(2) Change the detecting conditions and check that the displayed letters disappear. For example, insert a document through the document front (or rear) sensor and check that the "F" (or "E") of the FRE disappears.

(3) To stop this operation, press the **Stop** key. The equipment beeps for one second and returns to the initial stage of the maintenance mode.

3.9 Fine Adjustment of Scanning Start/End Position

n Function

This function allows you to adjust the scanning start/end position.

n Operating Procedure

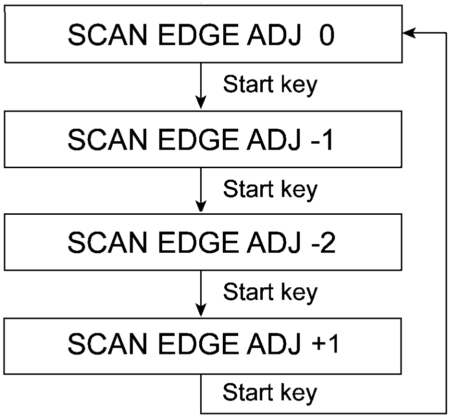
(1) Press the **5** and **4** keys in this order in the initial stage of the maintenance mode.

The LCD shows the current scanning position correction value as shown at right.

(2) Press the **Start** key. Each time you press the **Start** key, the LCD cycles through the displays shown at right.

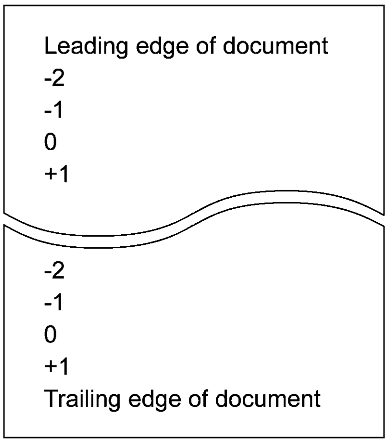
That is, pressing this key cycles through the correction values (mm) as shown below.

0 → -1 → -2 → +1


SCAN EDGE ADJ 0
Start key
SCAN EDGE ADJ -1
Start key
SCAN EDGE ADJ -2
Start key
SCAN EDGE ADJ +1
Start key

(3) To stop this operation, press the **Stop** key. The equipment beeps for one second and returns to the initial stage of the maintenance mode.

NOTE: The relationship between the scanning start/end positions and their correction values is shown below.


Leading edge of document
-2
-1
0
+1
-2
-1
0
+1
Trailing edge of document

3.10 CIS Scanner Area Setting

n **Function**

The equipment sets the CIS scanner area and stores it into the EEPROM.

n **Operating Procedure**

(1) In the initial stage of the maintenance mode, set the "adjusting sheet A" on the document stacker.

(2) Press the **5** key twice.

The "SCANNER AREA SET" will appear on the LCD.

The equipment checks and sets the area to be scanned.

If no error is noted, the equipment returns to the initial stage of the maintenance mode.

If any error is noted, the "SCANNER ERROR" will appear on the LCD. To return the equipment to the initial stage of the maintenance mode, press the **Stop** key.

3.11 EEPROM Customizing

n **Function**

This function allows you to customize the EEPROM according to language, function settings, and firmware switch settings. The customizing codes list is given in Appendix 1.

NOTE: If you replace the main PCB or CIS, be sure to carry out this procedure.

n **Operating Procedure**

(1) Press the **7** and **4** keys in this order in the initial stage of the maintenance mode.

The current customizing code (e.g., 1101 in the case of FAX275 U.S.A. versions) appears.

(2) Enter the desired customizing code (e.g., 0102 in the case of FAX275 Canadian versions).

The newly entered code appears.

NOTE: *If a wrong 4-digit code is entered, the equipment will malfunction.*

(3) Press the **Start** key.

The equipment saves the setting and returns to the initial stage of the maintenance mode.

If you press the **Stop** key or no keys are pressed for one minute in the above procedure, the equipment stops the procedure and returns to the initial stage of the maintenance mode.

3.12 Equipment Error Code Indication

n Function

This function displays an error code of the last error on the LCD.

n Operating Procedure

(1) Press the **8** and **2** keys in this order in the initial stage of the maintenance mode.

The LCD shows the "MACHINE ERROR _ _".

(2) To stop this operation and return the equipment to the initial stage of the maintenance mode, press the **Stop** key.

3.13 Output of Transmission Log to the Telephone Line

n Function

This function outputs the transmission log (that the equipment has stored about the latest transmission) to the telephone line. It allows the service personnel to receive the transmission log of the user's equipment at a remote location and use it for analyzing problems arising in the user's equipment.

n Operating Procedure

(1) If the user's equipment has a transmission-related problem, call the user's equipment at a remote location from your equipment.

(2) If the line is connected, have the user perform the following:

1) For FAX255/FAX275/FAX355MC/FAX375MC: Press the **Function**, **Mode**, and **0** keys in this order.

For FAX-515/FAX-525DT/FAX-525MC/HOMEFAX3: Press the **Menu**, **Mode**, and **0** keys in this order.

2) Press the **8** and **7** keys.

The above operation makes the user's equipment send CNG to your equipment for sending the transmission log.

(3) If you hear the CNG sent from the user's equipment, press the **Start** key of your equipment.

Your equipment will start to receive the transmission log from the user's equipment.

3.14 Document Draw Adjustment

After replacement of the main PCB or CIS, or if data stored in the EEPROM is damaged, you need to carry out this procedure by using the TC-027 chart.

n Function

This function adjusts how much the document is drawn in, starting at the point when the document rear sensor is turned on until the leading edge of the document reaches the scanning start position.

n Operating Procedure

(1) In the initial stage of the maintenance mode, set the TC-027 chart on the document stacker.

The message "DOC. READY" appears on the LCD.

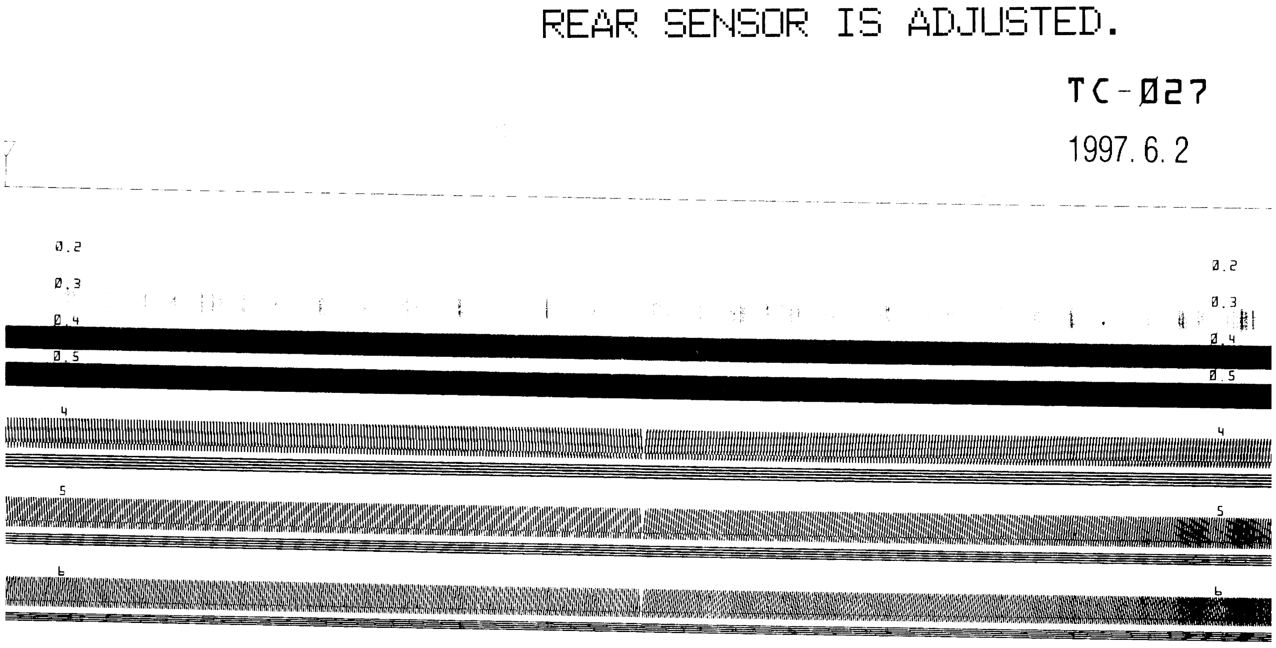
(2) For FAX255/FAX275/FAX355MC/FAX375MC: Press the **Function** key.

For FAX-515/FAX-525DT/FAX-525MC/HOMEFAX3: Press the **Menu** key.

The equipment beeps and draws in the TC-027 chart to the scanning start position. While drawing it in, the equipment counts patterns on the chart to determine the amount of draw.

Upon completion of normal counting, the equipment shows the message "COPY P.01 SUP" on the LCD and begins copying the TC-027 chart. The message "REAR SENSOR IS ADJUSTED." and the copied image will be printed out on recording paper as shown below.

If any error occurs during counting, the message "MACHINE ERROR AB" appears on the LCD, with no copying of the TC-027 chart onto the recording paper. However, only the message "REAR SENSOR IS ADJUSTED." will be printed out.



REAR SENSOR IS ADJUSTED.

TC-027

1997. 6. 2

0.2
0.3
0.4
0.5
4
5
6
0.2
0.3
0.4
0.5
4
5
6

Printout after Normal Completion of Document Draw Adjustment

CHAPTER VI.

ERROR INDICATION AND TROUBLESHOOTING

CHAPTER VI. ERROR INDICATION AND TROUBLESHOOTING

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1. ERROR INDICATION

To help the user or the service personnel promptly locate the cause of a problem (if any), the facsimile equipment incorporates the self-diagnostic functions which display error messages for equipment errors and communications errors.

For the communications errors, the equipment also prints out the transmission verification report and the communications list.

1.1 Equipment Errors

If an equipment error occurs, the facsimile equipment emits an audible alarm (continuous beeping) for approximately 4 seconds and shows the error message on the LCD. For the error messages, see [1] below. As one of the error messages, "MACHINE ERROR XX" includes an error code which indicates the detailed error causes listed in [2]. To display an error code for the other latest error message, make the equipment enter the maintenance mode and press 8 and 2 keys (for details, refer to Chapter V, Section 3.12).

[1] Error messages on the LCD

Messages on the LCD	Probable Cause
PAPER ROLL EMPTY	The paper empty (PE) sensor detects that no recording paper is present.
PRINTER JAM	The recording paper failed to return to the printing position after it had been cut.
COVER OPEN	The cover sensor detects that the control panel ASSY is not closed.
DOCUMENT JAM	■ Document jam (1) The document length exceeds the limitation (400 or 90 cm) registered by firmware switch WSW16. (Refer to Chapter V, Section 3.5.) (Both the document front and rear sensors stay ON even after the document has been fed by the registered length.) (2) The document rear sensor detects no trailing edge of a document after the document has been fed by 400 cm. (The document rear sensor stays ON even after the document has been fed when the document front and rear sensors were OFF and ON, respectively.)

Messages on the LCD	Probable Cause
DOCUMENT JAM	■ Document loading error (1) The document rear sensor detects no leading edge of a document within 10 seconds from the start of document loading operation. (The document rear sensor stays OFF even after the document has been fed when the document front sensor was ON.) (2) The loaded document is too short. (Since the document is shorter than the distance between the document front and rear sensors, the document front sensor is turned OFF before the document rear sensor is turned ON.)
CUTTER JAM	The upper rotary blade of the automatic cutter failed to return to the home position within the specified time after cutting the recording paper.
CLEAN UP SCANNER	In the scanning compensation data list printed by the maintenance-mode function No. 05, less than fifty percent of the white level data is faulty. (This message may appear only in the maintenance mode.)
SCANNER ERROR	In the scanning compensation data list printed by the maintenance-mode function No. 05, fifty percent or more of the white level data is faulty. (This message may appear only in the maintenance mode.)
PRINTER FAULT	The thermistor in the recording head caused a heat error.
PC BUSY OR FAIL*	After connected with the host computer, the equipment has received no response from the computer. (A communications error has occurred.)
CONNECTION FAIL**	After connected with the host computer or optional handy scanner, the equipment has received no response from the computer or handy scanner. (A communications error has occurred.)
MACHINE ERROR XX	"XX" indicates an error code. Refer to Section [2] on the next page.

* This message has prepared only for those versions that do not support an optional handy scanner.

** This message has prepared only for those versions that support an optional handy scanner.

If only an alarm beep is heard without any message on the LCD when the equipment is powered up, the ROM or RAM will be defective.

[2] Error codes shown in the "MACHINE ERROR XX" message

Error Code xx (Hex.)	Error factor
(87	Fails to complete the sequence of recording operation.)
(89	Cutter jam.)
8A	Wrong or weak contact of the recording head connectors.
(8B	Recording head overheat.)
(A1	Recording paper cover opened.)
(A2	Document too long to scan.)
(A3	Document not detected by the document rear sensor.)
(A4	50% or more faulty of white level data.) *
(A5	Faulty operation of DMA0 during scanning.)
(A6	Faulty operation of DMA1 during scanning.)
(A7	One-line feeding time-out error.)
(A8	One-line scanning time-out error.)
(A9	Abnormal scanning reference voltage.)
(AB	Document feed-in amount measuring error.) *
(AC	Less than 50% faulty of white level data.) *
(B9	Light emission intensity error of the LED array.)
(BE	Abnormal clamp PWM value)
(BF	Light emission intensity error of the LED array at the setting time of initial values.) *
(D5	The MODEM fails to complete the command transmission sequence.)
(D6	No MODEM interrupt for 60 seconds.)
(E4	Out of recording paper.)
E6	Write error in E^{2}PROM.
(E8	Data scanning error during transmission.)
F3	Voice message recording or playing-back not started.
(F5	EOL not found in page memory transmission mode.)
(F6	PC interface error.)
(F7	Optional handy scanner interface error.)

Error codes in parentheses do not appear in the "MACHINE ERROR XX", since those errors are displayed as messages described in "[1] Error messages on the LCD." You can display those error codes in the maintenance mode (Function code 82). Those error codes appear in the communications error list if an equipment error occurs during communications. Refer to Section 1.2, (13).

* Those codes marked with an asterisk can appear only in the maintenance mode.

1.2 Communications Errors

If a communications error occurs, the facsimile equipment

(1) emits an audible alarm (intermittent beeping) for approximately 4 seconds,
(2) displays the corresponding error message, and
(3) prints out the transmission verification report if the equipment is in sending operation.

■ Definition of Error Codes on the Communications List

(1) Calling

Code 1	Code 2	Causes
10	08	Wrong number called.
11	01	No dial tone detected before start of dialing.
11	02	Busy tone detected before dialing.
11	03	2nd dial tone not detected.
11	05	No loop current detected. *
11	06	Busy tone detected after dialing or called.
11	07	No response from the remote station in sending.
11	10	No tone detected after dialing.
17	07	No response from the calling station in receiving.

* Available in Germany and Austria only.

(2) Command reception

Code 1	Code 2	Causes
20	01	Unable to detect a flag field.
20	02	Carrier was OFF for 200 ms or longer.
20	03	Abort detected ("1" in succession for 7 bits or more).
20	04	Overrun detected.
20	05	A frame for 3 seconds or more received.
20	06	CRC error in answer back.
20	07	Undefined command received.
20	08	Invalid command received.
20	09	Command ignored once for document setting or for dumping-out at turn-around transmission.
20	0A	T5 time-out error
20	0B	CRP received.
20	0C	EOR and NULL received.

(3) Compatibility [checking the NSF and DIS]

Code 1	Code 2	Causes
32	01	Remote terminal only with V.29 capability in 2400 or 4800 bps transmission.
32	02	Remote terminal not ready for polling.
32	10	Remote terminal not equipped with password function or its password switch OFF.
32	11	Remote terminal not equipped with or not ready for confidential mail box function.
32	12	Remote terminal not equipped with or not ready for relay broadcasting function.
32	13	No confidential mail in the remote terminal.
32	14	The available memory space of the remote terminal is less than that required for reception of the confidential or relay broadcasting instruction.

(4) Instructions received from the remote terminal [checking the NSC, DTC, NSS, and DCS]

Code 1	Code 2	Causes
40	02	Illegal coding system requested.
40	03	Illegal recording width requested.
40	05	ECM requested although not allowed.
40	06	Polled while not ready.
40	07	No document to send when polled.
40	10	Nation code or manufacturer code not coincident.
40	11	Unregistered group code entered for relay broadcasting function, or the specified number of broadcasting subscribers exceeding the limit.
40	12	Retrieval attempted when not ready for retrieval.
40	13	Polled by any other manufacturers' terminal while waiting for secure polling.
40	17	Invalid resolution selected.

(5) Command reception [checking the NSF and DIS after transmission of NSS and DCS]

Code 1	Code 2	Causes
50	01	Vertical resolution capability changed after compensation of background color.

(6) ID checking

Code 1	Code 2	Causes
63	01	Password plus "lower 4 digits of telephone number" not coincident.
63	02	Password not coincident.
63	03	Polling ID not coincident.
63	04	Entered confidential mail box ID uncoincident with the mail box ID.
63	05	Relay broadcasting ID not coincident.
63	06	Entered retrieval ID uncoincident with that of the mail box ID.

(7) DCN reception

Code 1	Code 2	Causes
74		DCN received.

(8) TCF transmission/reception

Code 1	Code 2	Causes
80	01	Fallback impossible.

(9) Signal isolation

Code 1	Code 2	Causes
90	01	Unable to detect video signals and commands within 6 seconds after CFR is transmitted.
90	02	Received PPS containing invalid page count or block count.

(10) Video signal reception

Code 1	Code 2	Causes
A0	03	Error correction sequence not terminated even at the final transmission speed for fallback.
A0	11	Receive buffer empty. (5-second time-out)
A0	12	Receive buffer full during operation except receiving into memory.
A0	13	Decoding error continued on 500 lines.
A0	14	Decoding error continued for 10 seconds.
A0	15	Time-out: Five seconds or more for one-line transmission.
A0	16	RTC not found and carrier OFF signal detected for 6 seconds.
A0	17	RTC found and command detected for 60 seconds.
A8	01	RTN, PIN, or ERR received at the calling terminal. *
A9	01	RTN, PIN, or ERR received at the called terminal. *
AA	18	Receive buffer full during receiving into memory.

* Available in Germany and Austria only.

(11) General communications-related

Code 1	Code 2	Causes
B0	01	Polarity inversion detected.
B0	02	Unable to receive the next-page data.
B0	03	Unable to receive polling even during turn-around transmission due to call reservation.
B0	04	PC interface error.

(12) Maintenance mode

Code 1	Code 2	Causes
E0	01	Failed to detect 1300 Hz signal in burn-in operation.
E0	02	Failed to detect PB signals in burn-in operation.
E0	03	Failed to detect any command from the RS-232C interface in burn-in operation.

(13) Equipment error

Code 1	Code 2	Causes
FF	XX	Equipment error (For XX, refer to Subsection 1.1 [2].)

2. TROUBLESHOOTING

2.1 Introduction

This section gives the service personnel some of the troubleshooting procedures to be followed if an error or malfunction occurs with the facsimile equipment. It is impossible to anticipate all of the possible problems which may occur in future and determine the troubleshooting procedures, so this section covers some sample problems. However, those samples will help service personnel pinpoint and repair other defective elements if he/she analyzes and examines them well.

2.2 Precautions

Be sure to observe the following to prevent the secondary troubles from happening:

(1) Always unplug the AC power cord from the outlet when removing the covers and PCBs, adjusting the mechanisms, or conducting continuity testing with a circuit tester.

(2) When disconnecting the connectors, do not pull the lead wires but hold the connector housings.

(3)
- Before handling the PCBs, touch a metal portion of the machine to discharge static electricity charged in your body.
- When repairing the PCBs, handle them with extra care.

After repairing the defective section, be sure to check again if the repaired section works correctly. Also record the troubleshooting procedure so that it would be of use for future trouble occurrence.

2.3 Checking prior to Troubleshooting

Prior to proceeding to the troubleshooting procedures, check that:

(1) Each voltage level on AC input lines and DC lines is correct.

(2) All cables and harnesses are firmly connected.

(3) None of the fuses are blown.

2.4 Troubleshooting Procedures

[1] Control panel related

Trouble	Check:
(1) LCD shows nothing.	• Main-panel harness between the main PCB and the control panel PCB • Interfaces between the main PCB, NCU PCB and power supply PCB • Control panel PCB • Power supply PCB • Main PCB
(2) Control panel inoperative.	• Main-panel harness between the main PCB and the control panel PCB • Interfaces between the main PCB, NCU PCB and power supply PCB • Control panel PCB • FPC key • Main PCB

[2] Telephone related

Trouble	Check:
(1) No phone call can be made.	• FPC key • Control panel PCB by using the maintenance-mode function No. 13. If any defective keys are found, replace them. (Refer to Chapter V, Section 3.7.) • NCU PCB • Main PCB
(2) Speed dialing or one-touch dialing will not work.	• Ordinary dialing function (other than the speed and one-touch dialing) If it works normally, check the main PCB; if not, refer to item (1) above.
(3) Speaker silent during on-hook dialing.	• Ordinary dialing function (other than the on-hook dialing with the hook key) If it works normally, proceed to the following checks; if not, refer to item (1) above.
(4) Dial does not switch between tone and pulse.	• Main PCB

Trouble	Check:
(5) Telephone does not ring.	• Speaker • NCU PCB • Main PCB

[3] Communications related

Trouble	Check:
(1) No tone is transmitted.	• Main PCB • NCU PCB

[4] Paper/document feeding related

Trouble	Check:
(1) Neither "COPY: PRESS COPY" nor "FAX: NO. & START" message appears although documents are set.	• Sensors by using the maintenance-mode function No. 32. (Refer to Chapter V, Section 3.8.) • Actuators of the document front and rear sensors • Main PCB
(2) Document not fed.	• ADF and its related sections • Drive motor and its harness • White pressure roller and its related gears • Solenoid and the planetary gear train • Main PCB
(3) Recording paper not fed.	• ADF and its related sections • Drive motor and its harness • Platen and its related gears • Solenoid and the planetary gear train • Main PCB
(4) The "CUTTER JAM" message cannot be removed.	• Drive motor and its harness • Cutter HP sensor and its position • Cutter gear • Solenoid and the planetary gear train • Main PCB

[5] Print-image related

If the received or sent image has any problem, first make a copy with the facsimile equipment.

If the copied image is normal, the problem may be due to the remote terminal; if it is abnormal, proceed to the following checks:

Trouble	Check:
(1) Completely blank	
At the scanner	• Main PCB
At the recorder	• Recording head harness • Compression springs beneath the recording head • Recording head • Main PCB
(2) White vertical streaks	
At the scanner	• CIS unit
At the recorder	• Recording head
(3) All black	
At the scanner	• CIS harness • CIS unit • Main PCB
At the recorder	• Recording head harness • Recording head • Main PCB
(4) Black vertical streaks	
At the scanner	• CIS unit
At the recorder	• Recording head
(5) Light or dark	
At the scanner	• CIS unit • Main PCB
At the recorder	• Compression springs beneath the recording head

Trouble	Check:
(6) Faulty image registration	
At the scanner	• CIS harness • CIS unit • Main PCB
At the recorder	• Recording head harness • Main PCB
(7) Image distortion	
In communications	• Error code displayed (Refer to Section 1, "ERROR INDICATION" in this chapter.) • NCU PCB • Main PCB
At the scanner	• Separation roller and its related sections • White pressure roller and its related gears • Solenoid and the planetary gear train • Drive motor and its harness • Main PCB
At the recorder	• Compression springs beneath the recording head • Platen and its related gears • Solenoid and the planetary gear train • Drive motor and its harness • Main PCB

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FAX-515/FAX-525DT/FAX-525MC/HOMEFAX V3

Appendix 1. EEPROM Customizing Codes

EEPROM Customizing Codes

This function allows you to customize the EEPROM according to language, function settings, and firmware switch settings. The customizing codes list is given on the next page.

■ Operating Procedure

|← Within 2 seconds →|

(1) FAX255/FAX275/FAX355MC/FAX375MC: Press the **Function**, *****, **2**, **8**, **6**, and **4** keys in this order to make the equipment enter the maintenance mode.

|← Within 2 seconds →|

FAX-515/FAX-525DT/FAX-525MC/HOMEFAX V3: Press the **Menu**, *****, **2**, **8**, **6**, and **4** keys in this order to make the equipment enter the maintenance mode.

The equipment beeps for approx. one second and displays "▮▮ MAINTENANCE ▮▮▮" on the LCD.

(2) Press the **7** and **4** keys in this order in the initial stage of the maintenance mode.

The current customizing code (e.g., 1101 in the case of FAX275 U.S.A. versions) appears.

(3) Enter the desired customizing code (e.g., 0102 in the case of FAX275 Canadian versions).

The newly entered code appears.

NOTE: *If a wrong 4-digit code is entered, the equipment will malfunction.*

(4) Press the **Start** key.

The equipment saves the setting and returns to the initial stage of the maintenance mode.

If you press the **Stop** key or no keys are pressed for one minute in the above procedure, the equipment stops the procedure and returns to the initial stage of the maintenance mode.

■ EEPROM Customizing Codes List

Versions	Model			
	FAX255(318)	FAX275(328)	FAX355MC	FAX375MC(735)
U.S.A.	1001 (3001)	1101 (3101)	1001 (3001)	1001 (3001)
CANADA	0002 (2002)	0102 (2102)	0002 (2002)	0002 (2002)
CHINA	---	0020	---	0020
TAIWAN	0023	0023	---	0023
HONG KONG	---	0140	---	0040
ARGENTINA	---	0135	---	0035
THAILAND	---	0141	---	0041
CHILLE	0035	0135	---	0035
ASIA	0040	0140	---	0040
GULF	---	0141	---	0041
BRAZIL	---	4101 (6101)	---	4001 (6001)
INDONESIA	---	0140	---	0040
INDIA	---	0140	---	0040
MEXICO	0035	0135	---	0035
RUSSIA	---	0141	---	0041

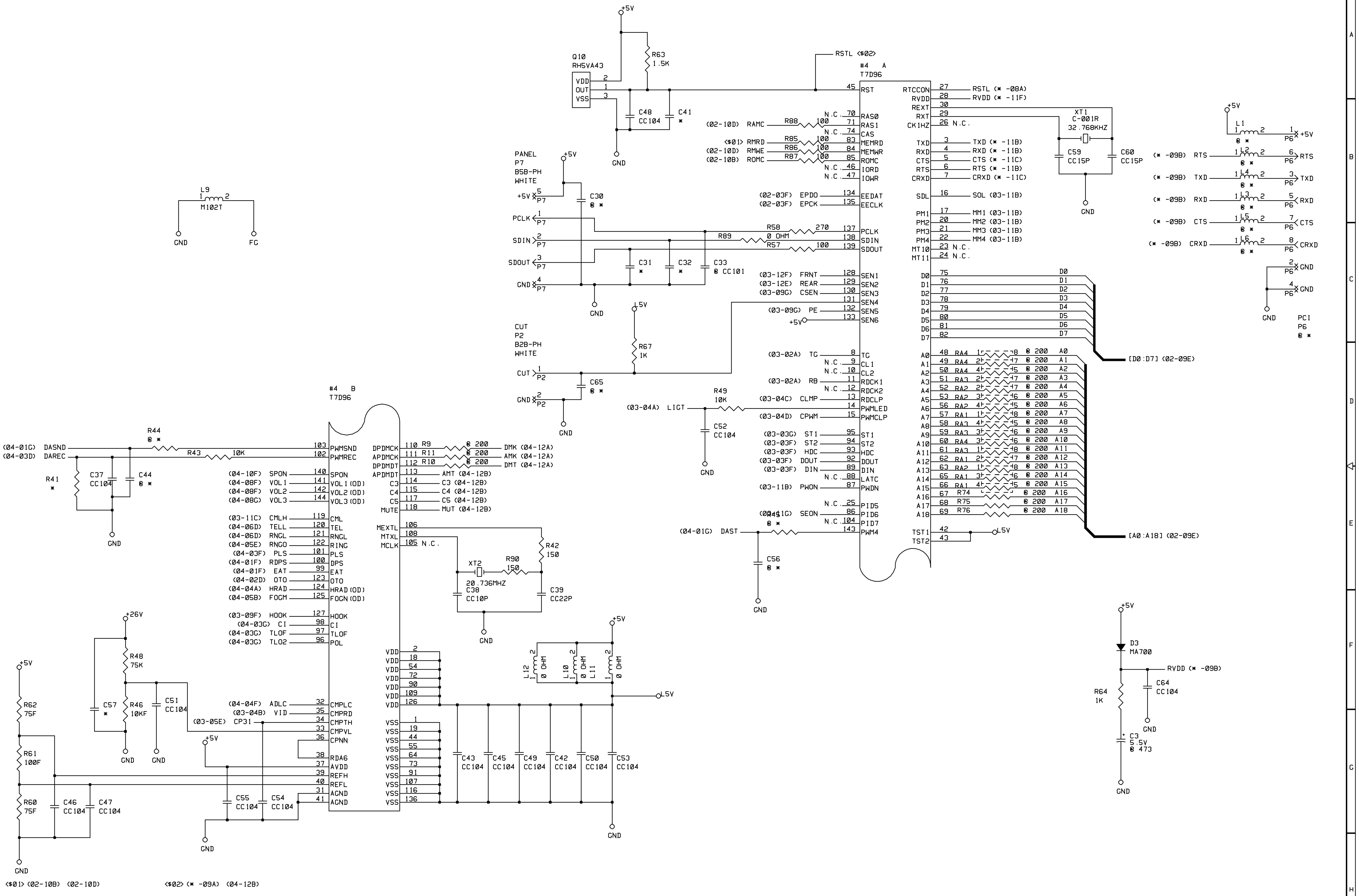
NOTE: Codes in parentheses should apply if the side of the CIS unit has a special marking.

Versions	Model			
	FAX-515	FAX-525DT	FAX-525MC	HOMEFAX V3
GERMANY	0003	0003	---	---
U.K.	0004	0004	---	---
FRANCE	0005	0005	---	---
NORWAY	0007	---	---	---
BELGIUM	0008	0008	---	---
NETHERLANDS	0009	0009	---	---
SWITZERLAND	0010	0010	---	---
IRELAND	0011	0011	---	---
FINLAND	0012	0012	---	---
DENMARK	0013	---	---	---
AUSTRIA	0014	0014	---	---
SPAIN	0015	0015	---	---
ITALY	0016	0016	---	---
ISRAEL	0004	---	---	---
PORTUGAL	0018	---	---	---
SWEDEN	0026	---	---	---
AUSTRALIA	0006	---	0006	---
NEW ZEALAND	0027	---	0027	0027

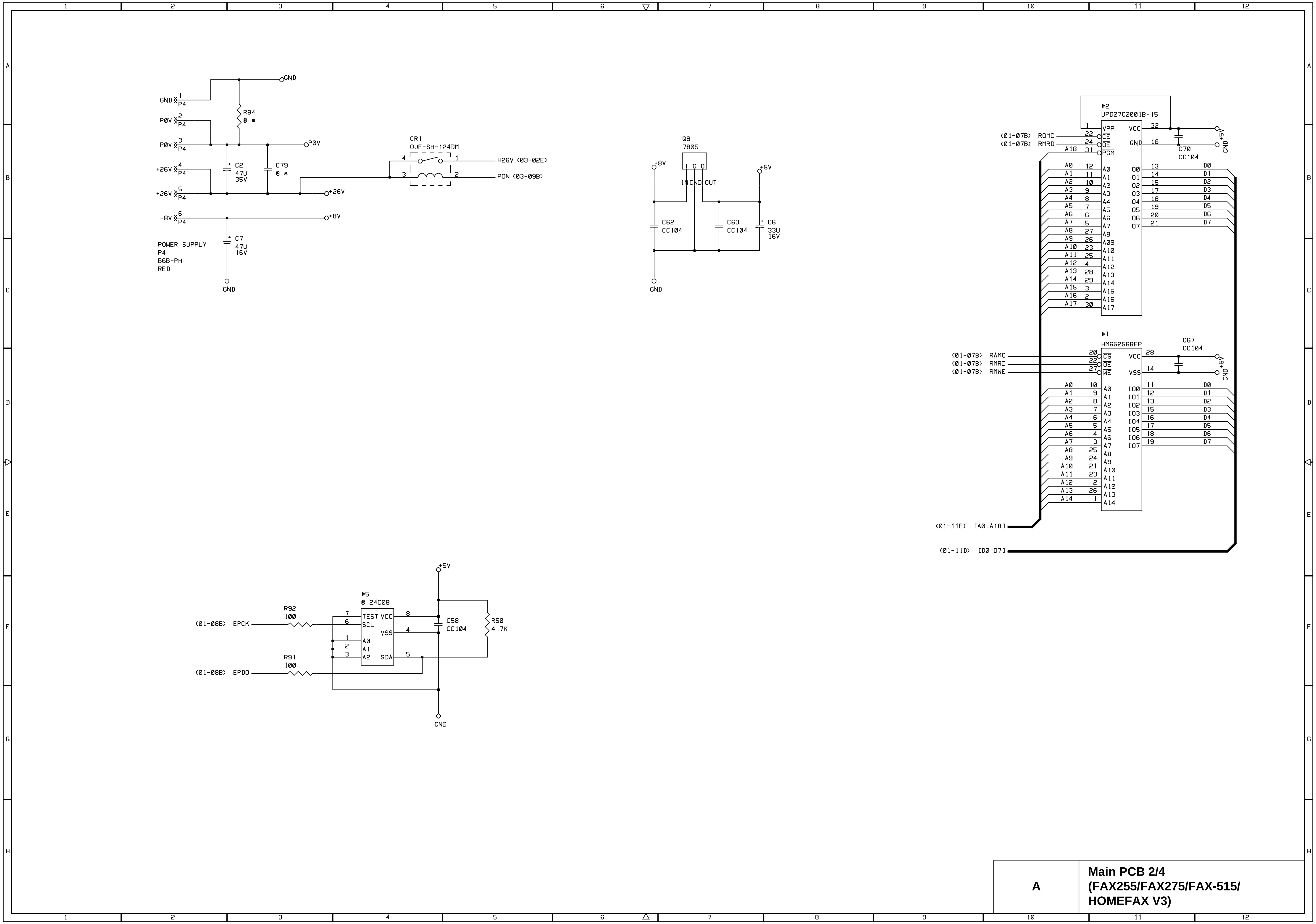
FAX255/FAX275/FAX355MC/FAX375MC
FAX-515/FAX-525DT/FAX-525MC/HOMEFAX V3

Appendix 2. Circuit Diagrams

A. Main PCB
B. Network Control Unit (NCU) PCB
C. Control Panel PCB
D. Power Supply PCB

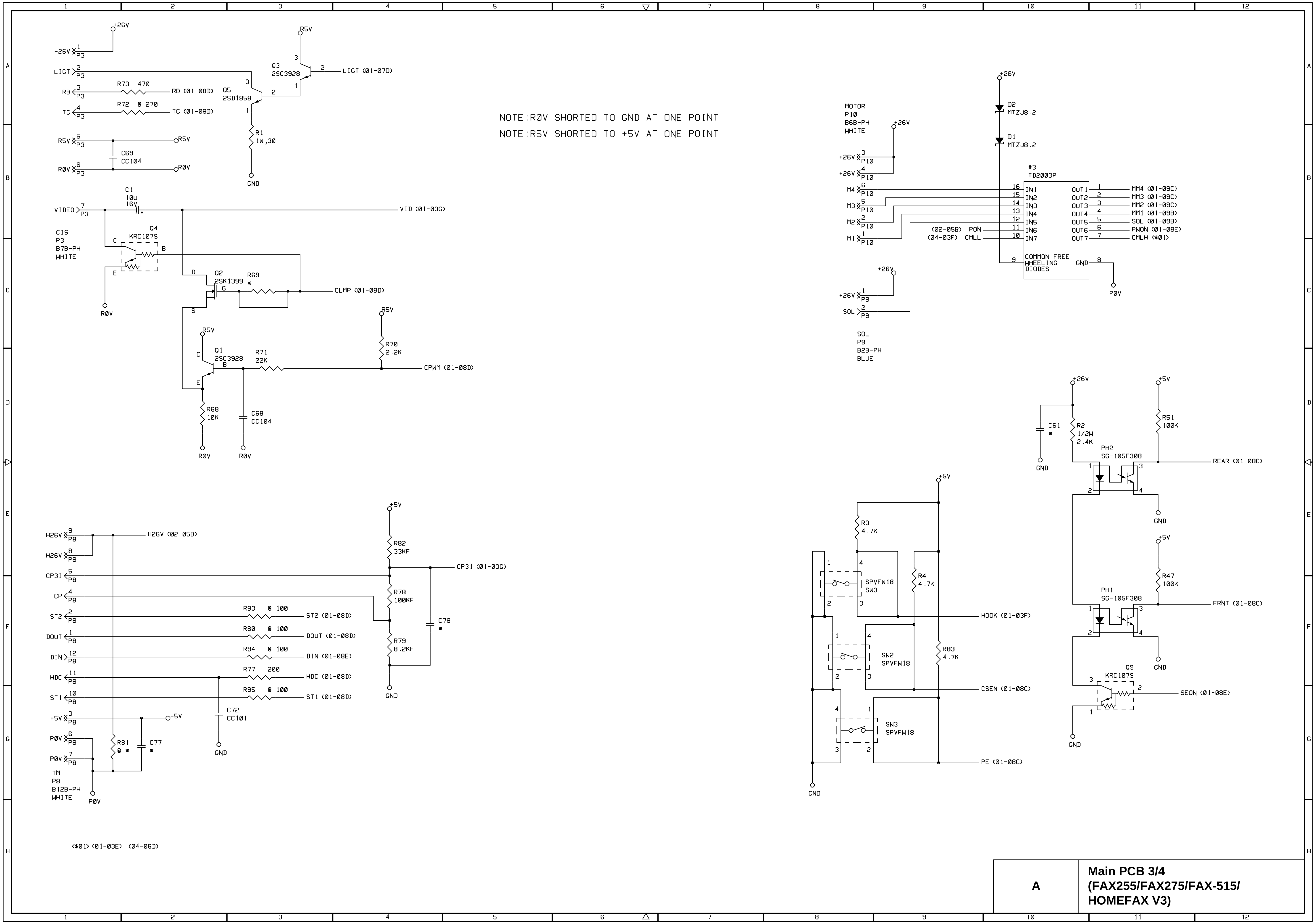

Q10
RH5VA43
VDD
OUT
VSS
+5V
R63
1.5K
C48
CC104
C41
RSTL ($02)
#4 A
T7D96
RST
RAS0
RAS1
CAS
MEMRD
MEMWR
ROMC
IORD
IOWR
EEDAT
EECLK
PCLK
SDIN
SDOUT
SEN1
SEN2
SEN3
SEN4
SEN5
SEN6
TG
CL1
CL2
RDCK1
RDCK2
RDCLP
PWMLED
PWMCLP
ST1
ST2
HDC
DOUT
DIN
LATC
PWDN
PID5
PID6
PID7
PWM4
RTCCON
RVDD
REXT
RXT
CK1HZ
TXD
RXD
CTS
RTS
CRXD
SDL
PM1
PM2
PM3
PM4
MT10
MT11
D0
D1
D2
D3
D4
D5
D6
D7
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
A18
TST1
TST2
RSTL (* -08A)
RVDD (* -11F)
XT1
C-001R
32.768KHZ
C59
CC15P
C60
CC15P
TXD (* -11B)
RXD (* -11B)
CTS (* -11C)
RTS (* -11B)
CRXD (* -11C)
SOL (03-11B)
MM1 (03-11B)
MM2 (03-11B)
MM3 (03-11B)
MM4 (03-11B)
[D0:D7] (02-09E)
[A0:A18] (02-09E)
RA1
RA2
RA3
RA4
R74
R75
R76
0 200
L5V
(02-10D) RAMC
R88
($01) RMRD
(02-10D) RMWE
(02-10B) ROMC
R85
R86
R87
100
(02-03F) EPDO
(02-03F) EPCK
R58
270
R89
0 OHM
R57
(03-12F) FRNT
(03-12E) REAR
(03-09G) CSEN
(03-09G) PE
(03-02A) TG
(03-02A) RB
(03-04C) CLMP
(03-04D) CPWM
(03-03G) ST1
(03-03F) ST2
(03-03F) HDC
(03-03F) DOUT
(03-03F) DIN
(03-11B) PWON
(04-01G) SEON
(04-01G) DAST
R45
C56
(03-04A) LIGT
R49
10K
C52
CC104
PANEL
P7
B5B-PH
WHITE
PCLK
SDIN
SDOUT
C30
C31
C32
C33
0 CC101
R67
1K
CUT
P2
B2B-PH
WHITE
C65
L9
M102T
FG
L1
L2
L3
L4
L5
L6
P6
PCI
+5V
RTS
TXD
RXD
CTS
CRXD
(* -09B)
#4 B
T7D96
PWMSND
PWMREC
SPON
VOL1(OD)
VOL2(OD)
VOL3(OD)
CML
TEL
RNGL
RING
PLS
DPS
EAT
OTO
HRAD(OD)
FOGN(OD)
HOOK
CI
TLOF
POL
CMPLC
CMPRD
CMPTH
CMPVL
CPNN
RDA6
AVDD
REFH
REFL
AGND
DPDMCK
APDMCK
DPDMDT
APDMDT
C3
C4
C5
MUTE
MEXTL
MTXL
MCLK
VDD
VSS
(04-01G) DASND
(04-03D) DAREC
R44
R43
10K
R41
C37
CC104
C44
(04-10F) SPON
(04-08F) VOL1
(04-08F) VOL2
(04-08G) VOL3
(03-11C) CMLH
(04-06D) TELL
(04-06D) RNGL
(04-05E) RNGO
(04-03F) PLS
(04-01F) RDPS
(04-01F) EAT
(04-02D) OTO
(04-04A) HRAD
(04-05B) FOGM
(03-09F) HOOK
(04-03G) CI
(04-03G) TLOF
(04-03G) TLO2
(04-04F) ADLC
(03-04B) VID
(03-05E) CP31
R9
R11
R10
DMK (04-12A)
AMK (04-12A)
DMT (04-12A)
AMT (04-12B)
C3 (04-12B)
C4 (04-12B)
C5 (04-12B)
MUT (04-12B)
R42
150
XT2
20.736MHZ
R90
150
C38
CC10P
C39
CC22P
+26V
R48
75K
C57
R46
10KF
C51
CC104
R62
75F
R61
100F
R60
75F
C46
CC104
C47
CC104
C55
CC104
C54
CC104
L12
L10
L11
0 OHM
C43
C45
C49
C42
C50
C53
CC104
D3
MA700
RVDD (* -09B)
R64
1K
C64
CC104
C3
5.5V
0 473
GND
N.C.
($01) (02-10B) (02-10D)
($02) (* -09A) (04-12B)

A	Main PCB 1/4 (FAX255/FAX275/FAX-515/ HOMEFAX3)


GND
P4 1 GND
P4 2 P0V
P4 3 P0V
P4 4 +26V
P4 5 +26V
P4 6 +8V
R84
@ *
P0V
C2
47U
35V
C79
@ *
+26V
+8V
C7
47U
16V
POWER SUPPLY
P4
B6B-PH
RED
GND
CR1
OJE-SH-124DM
H26V (03-02E)
PON (03-09B)
Q8
7805
I C O
IN GND OUT
+8V
+5V
C62
CC104
C63
CC104
C6
33U
16V
GND
#2
UPD27C2001B-15
VPP
CE
OE
PGM
VCC
GND
(01-07B) ROMC
(01-07B) RMRD
A18
C70
CC104
+5V
GND
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17
O0 O1 O2 O3 O4 O5 O6 O7
D0 D1 D2 D3 D4 D5 D6 D7
#1
HM65256BFP
C67
CC104
(01-07B) RAMC
(01-07B) RMRD
(01-07B) RMWE
CS
OE
WE
VCC
VSS
IO0 IO1 IO2 IO3 IO4 IO5 IO6 IO7
(01-11E) [A0:A18]
(01-11D) [D0:D7]
+5V
#5
@ 24C08
TEST
SCL
A0
A1
A2
VCC
VSS
SDA
R92
100
(01-08B) EPCK
R91
100
(01-08B) EPDO
C58
CC104
R50
4.7K
GND
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H

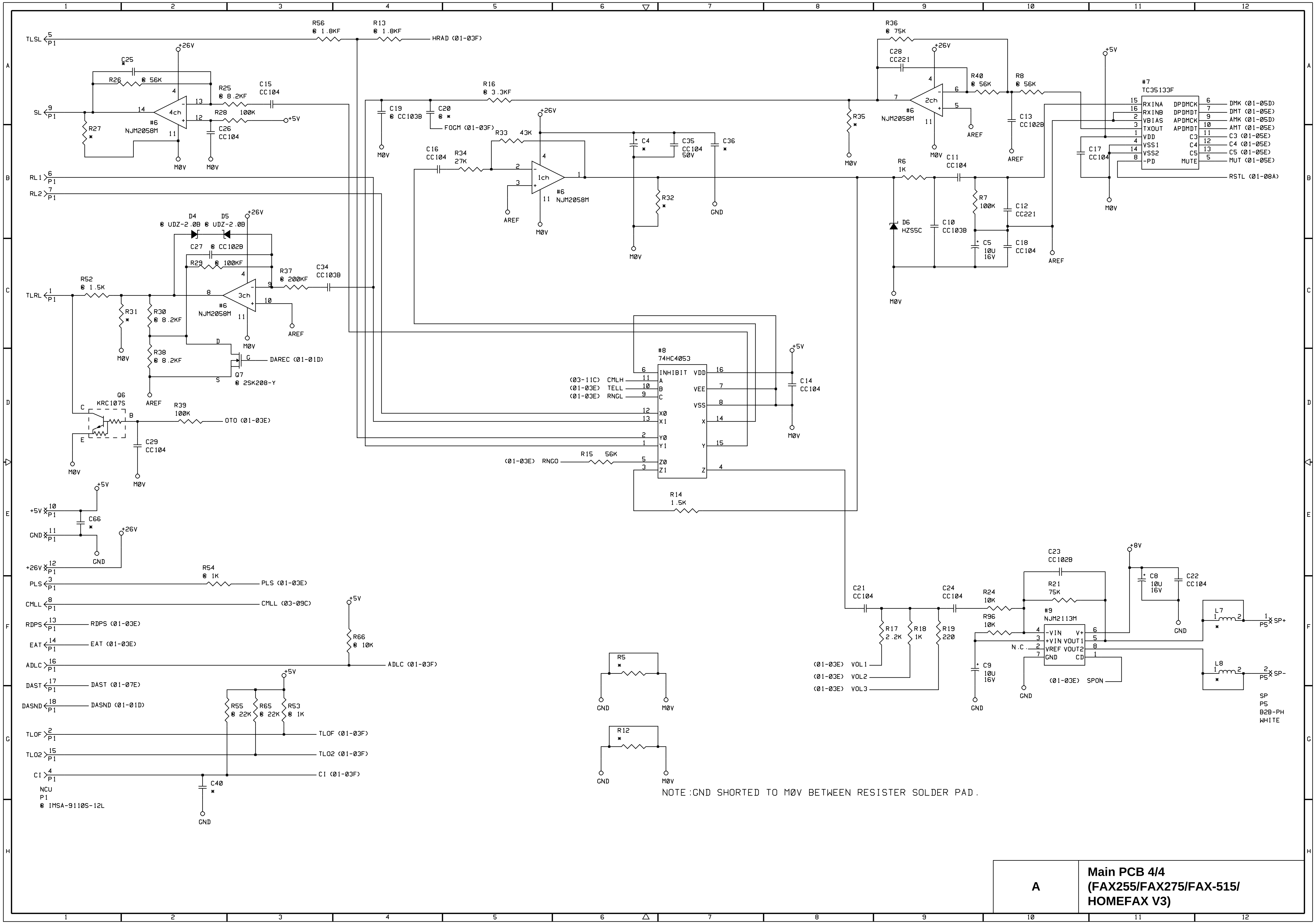
A

Main PCB 2/4 (FAX255/FAX275/FAX-515/ HOMEFAX V3)


NOTE:R0V SHORTED TO GND AT ONE POINT
NOTE:R5V SHORTED TO +5V AT ONE POINT
+26V
+26V P3 1
LIGT P3 2
RB P3 3
TG P3 4
R5V P3 5
R0V P3 6
R73 470
RB (01-08D)
R72 0 270
TG (01-08D)
R5V
R0V
C69 CC104
R5V
Q3 2SC3928
LIGT (01-07D)
Q5 2SD1858
R1 1W,30
GND
VIDEO P3 7
C1 10U 16V
VID (01-03G)
CIS P3 B7B-PH WHITE
Q4 KRC107S
R0V
Q2 2SK1399
R69
CLMP (01-08D)
R5V
R70 2.2K
Q1 2SC3928
R71 22K
CPWM (01-08D)
R68 10K
C68 CC104
R0V
R0V
H26V P8 9
H26V P8 8
H26V (02-05B)
CP31 P8 5
CP P8 4
ST2 P8 2
DOUT P8 1
DIN P8 12
HDC P8 11
ST1 P8 10
+5V P8 3
P0V P8 6
P0V P8 7
TM P8 B12B-PH WHITE
P0V
+5V
R82 33KF
CP31 (01-03G)
R78 100KF
R79 8.2KF
C78
GND
R93 0 100
ST2 (01-08D)
R80 0 100
DOUT (01-08D)
R94 0 100
DIN (01-08E)
R77 200
HDC (01-08D)
R95 0 100
ST1 (01-08D)
+5V
C72 CC101
GND
R81 0
C77
<$01> (01-03E) (04-06D)
MOTOR P10 B6B-PH WHITE
+26V
+26V P10 3
+26V P10 4
M4 P10 6
M3 P10 5
M2 P10 2
M1 P10 1
+26V
D2 MTZJ8.2
D1 MTZJ8.2
#3 TD2003P
IN1 IN2 IN3 IN4 IN5 IN6 IN7
OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 OUT7
COMMON FREE WHEELING DIODES
GND
(02-05B) PON
(04-03F) CMLL
MM4 (01-09C)
MM3 (01-09C)
MM2 (01-09C)
MM1 (01-09B)
SOL (01-09B)
PWON (01-08E)
CMLH <$01>
P0V
+26V
+26V P9 1
SOL P9 2
SOL P9 B2B-PH BLUE
+26V
+5V
C61
GND
R2 1/2W 2.4K
R51 100K
PH2 SG-105F308
REAR (01-08C)
GND
+5V
R47 100K
PH1 SG-105F308
FRNT (01-08C)
GND
Q9 KRC107S
SEON (01-08E)
GND
+5V
R3 4.7K
SPVFW18 SW3
R4 4.7K
HOOK (01-03F)
SW2 SPVFW18
R83 4.7K
CSEN (01-08C)
SW3 SPVFW18
PE (01-08C)
GND

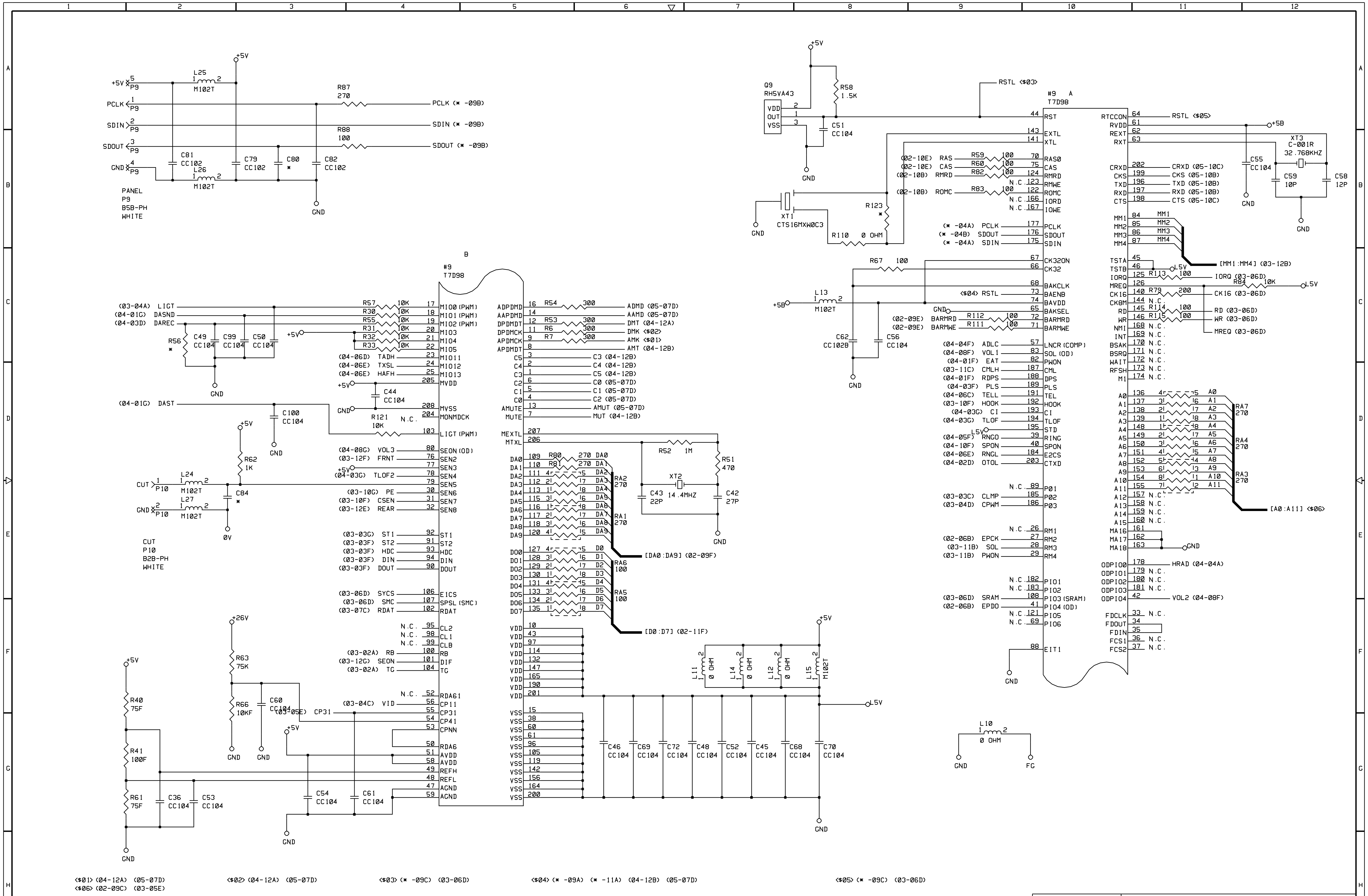
A

Main PCB 3/4 (FAX255/FAX275/FAX-515/ HOMEFAX V3)


TLSL
SL
RL1
RL2
TLRL
+5V
GND
+26V
PLS
CMLL
RDPS
EAT
ADLC
DAST
DASND
TLOF
TLO2
CI
NCU
P1
@ IMSA-9110S-12L
R56 @ 1.8KF
R13 @ 1.8KF
HRAD (01-03F)
C25
R26 @ 56K
R25 @ 8.2KF
C15 CC104
R28 100K
C26 CC104
R27
#6 NJM2058M
4ch
3ch
2ch
1ch
M0V
AREF
R16 @ 3.3KF
C19 @ CC103B
C20
FOGM (01-03F)
R33 43K
C16 CC104
R34 27K
C4
C35 CC104 50V
C36
R32
R36 @ 75K
C28 CC221
R40 @ 56K
R8 @ 56K
R35
C13 CC102B
R6 1K
C11 CC104
R7 100K
C12 CC221
D6 HZS5C
C10 CC103B
C5 10U 16V
C18 CC104
C17 CC104
#7 TC35133F
RXINA
RXINB
VBIAS
TXOUT
VDD
VSS1
VSS2
-PD
DPDMCK
DPDMDT
APDMCK
APDMDT
C3
C4
C5
MUTE
DMK (01-05D)
DMT (01-05E)
AMK (01-05D)
AMT (01-05E)
C3 (01-05E)
C4 (01-05E)
C5 (01-05E)
MUT (01-05E)
RSTL (01-08A)
D4 @ UDZ-2.0B
D5 @ UDZ-2.0B
C27 @ CC102B
R29 @ 100KF
R37 @ 200KF
C34 CC103B
R52 @ 1.5K
R31
R30 @ 8.2KF
R38 @ 8.2KF
Q7 @ 2SK208-Y
DAREC (01-01D)
Q6 KRC107S
R39 100K
OTO (01-03E)
C29 CC104
#8 74HC4053
INHIBIT
VDD
VEE
VSS
(03-11C) CMLH
(01-03E) TELL
(01-03E) RNGL
(01-03E) RNGO
R15 56K
R14 1.5K
C14 CC104
C66
R54 @ 1K
PLS (01-03E)
CMLL (03-09C)
RDPS (01-03E)
EAT (01-03E)
R66 @ 10K
ADLC (01-03F)
DAST (01-07E)
DASND (01-01D)
R55 @ 22K
R65 @ 22K
R53 @ 1K
TLOF (01-03F)
TLO2 (01-03F)
CI (01-03F)
C40
R5
R12
NOTE:GND SHORTED TO M0V BETWEEN RESISTER SOLDER PAD.
C21 CC104
C24 CC104
R24 10K
R96 10K
R17 2.2K
R18 1K
R19 220
(01-03E) VOL1
(01-03E) VOL2
(01-03E) VOL3
C23 CC102B
R21 75K
#9 NJM2113M
-VIN
+VIN
VREF
GND
V+
VOUT1
VOUT2
CD
N.C.
(01-03E) SPON
C9 10U 16V
+8V
C8 10U 16V
C22 CC104
L7
L8
SP+
SP-
SP
P5
B2B-PH
WHITE

A

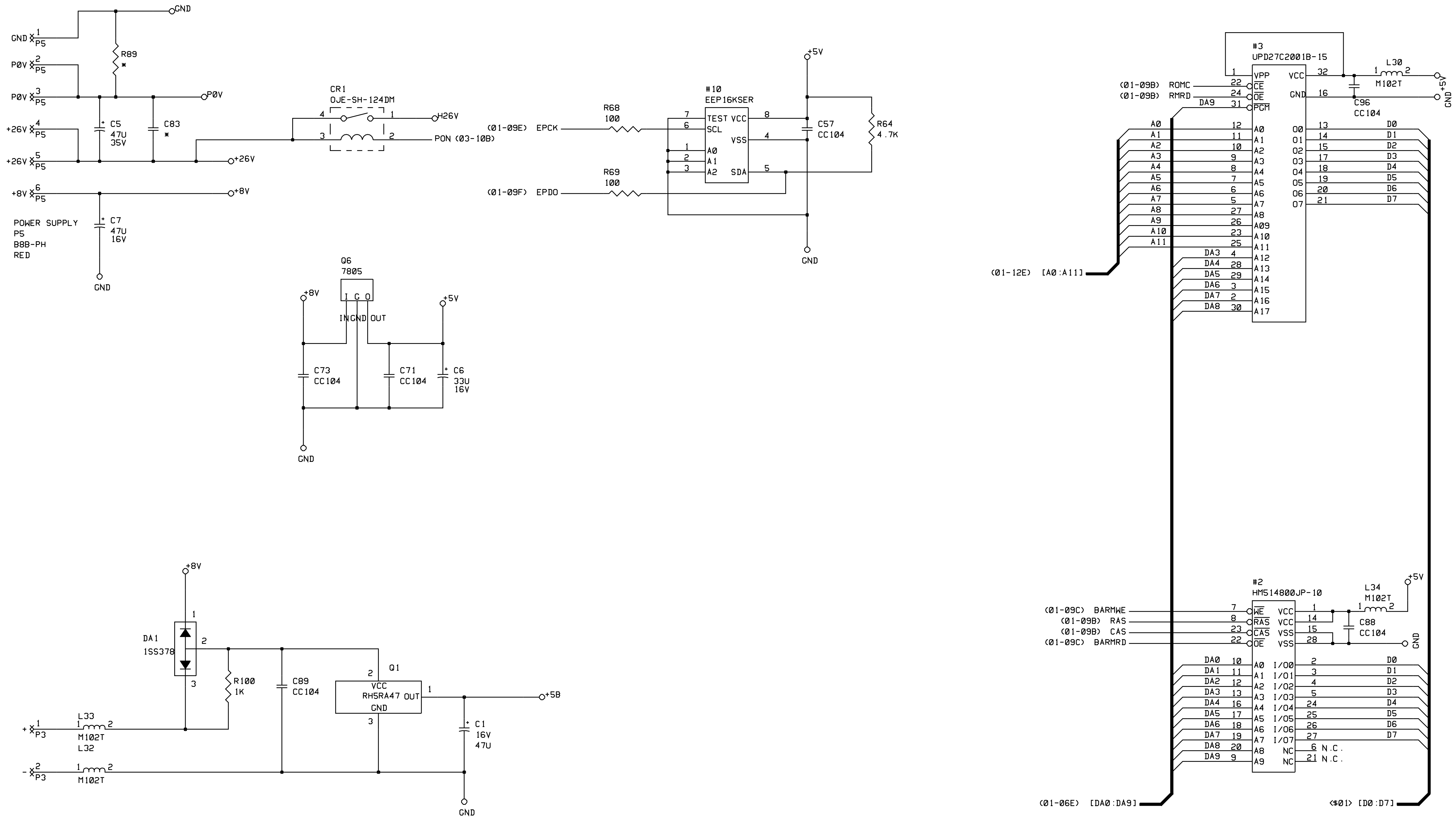
Main PCB 4/4
(FAX255/FAX275/FAX-515/
HOMEFAX V3)



1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H
+5V P9 PCLK SDIN SDOUT GND
L25 M102T
L26 M102T
R87 270
R88 100
PCLK (* -09B)
SDIN (* -09B)
SDOUT (* -09B)
C81 CC102
C79 CC102
C80 *
C82 CC102
PANEL
P9
B5B-PH
WHITE
GND
#9
T7D98
B
LIGT DASND DAREC
R57 R30 R55 R31 R32 R33 10K
MIO0 (PWM) MIO1 (PWM) MIO2 (PWM) MIO3 MIO4 MIO5
C49 CC104
C99 CC104
C50 CC104
R56 *
TADH TXSL HAFH
MIO11 MIO12 MIO13 MVDD
C44 CC104
DAST
C100 CC104
MVSS MONMDCK
R121 10K N.C.
LIGT (PWM)
R62 1K
L24 M102T
L27 M102T
C84 *
CUT P10
GND P10
0V
CUT
P10
B2B-PH
WHITE
VOL3 FRNT TLOF2 PE CSEN REAR
SEON (OD) SEN2 SEN3 SEN4 SEN5 SEN6 SEN7 SEN8
ST1 ST2 HDC DIN DOUT
SYCS SMC RDAT
E1CS SPSL (SMC) RDAT
CL2 CL1 CLB RB DIF TG
RB SEON TG
+26V
R63 75K
R66 10KF
C60 CC104
VID CP31
RDA61 CP11 CP31 CP41 CPNN RDA6 AVDD AVDD REFH REFL AGND AGND
R40 75F
R41 100F
R61 75F
C36 CC104
C53 CC104
C54 CC104
C61 CC104
ADPDMD AAPDMD DPDMDT DPDMCK APDMCK APDMDT
R54 300 R53 300 R6 300 R7 300
ADMD (05-07D)
AAMD (05-07D)
DMT (04-12A)
DMK <$02>
AMK <$01>
AMT (04-12B)
C5 C4 C3 C2 C1 C0 AMUTE MUTE
C3 (04-12B) C4 (04-12B) C5 (04-12B) C0 (05-07D) C1 (05-07D) C2 (05-07D)
AMUT (05-07D)
MUT (04-12B)
MEXTL MTXL
R52 1M
R51 470
XT2 14.4MHZ
C43 22P
C42 27P
DA0 DA1 DA2 DA3 DA4 DA5 DA6 DA7 DA8 DA9
R80 270 R81 270
RA2 270
RA1 270
[DA0:DA9] (02-09F)
D0 D1 D2 D3 D4 D5 D6 D7
RA6 100
RA5 100
[D0:D7] (02-11F)
VDD VSS
L11 0 OHM
L14 0 OHM
L12 0 OHM
L15 M102T
L5V
C46 CC104 C69 CC104 C72 CC104 C48 CC104 C52 CC104 C45 CC104 C68 CC104 C70 CC104
Q9
RH5VA43
VDD OUT VSS
R58 1.5K
C51 CC104
XT1
CTS16MXW0C3
R123 *
R110 0 OHM
RSTL <$03>
#9 A
T7D98
RST EXTL XTL
RAS0 CAS RMRD RMWE ROMC IORD IOWE
R59 100 R60 100 R82 100 R83 100
RAS CAS RMRD ROMC
PCLK SDOUT SDIN
R67 100
CK32ON CK32
L13 M102T
+5B
BAKCLK BAENB BAVDD BAKSEL BARMRD BARMWE
RSTL
R112 100
R111 100
BARMRD BARMWE
C62 CC102B
C56 CC104
ADLC VOL1 EAT CMLH RDPS PLS TELL HOOK C1 TLOF RNGO SPON RNGL OTOL
LNCR (COMP) SOL (OD) PWON CML DPS PLS TEL HOOK C1 TLOF STD RING SPON E2CS CTXD
P01 P02 P03
CLMP CPWM
RM1 RM2 RM3 RM4
EPCK SOL PWON
P101 P102 P103 (SRAM) P104 (OD) P105 P106
SRAM EPDO
E1T1
RTCCON RVDD REXT RXT
RSTL <$05>
XT3
C-001R
32.768KHZ
C55 CC104
C59 10P
C58 12P
CRXD CKS TXD RXD CTS
CRXD (05-10C) CKS (05-10B) TXD (05-10B) RXD (05-10B) CTS (05-10C)
MM1 MM2 MM3 MM4
[MM1:MM4] (03-12B)
TSTA TSTB IORQ MREQ CK16 CK8M RD WR NMI INT BSAK BSRQ WAIT RFSH M1
R113 100
IORQ (03-06D)
R84 10K
R79 200
CK16 (03-06D)
R114 100
R115 100
RD (03-06D)
WR (03-06D)
MREQ (03-06D)
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 MA16 MA17 MA18
RA7 270
RA4 270
RA3 270
[A0:A11] <$06>
ODPIO0 ODPIO1 ODPIO2 ODPIO3 ODPIO4
HRAD (04-04A)
VOL2 (04-08F)
FDCLK FDOUT FDIN FCS1 FCS2
L10 0 OHM
FG
<$01> (04-12A) (05-07D)
<$06> (02-09C) (03-05E)
<$02> (04-12A) (05-07D)
<$03> (* -09C) (03-06D)
<$04> (* -09A) (* -11A) (04-12B) (05-07D)
<$05> (* -09C) (03-06D)

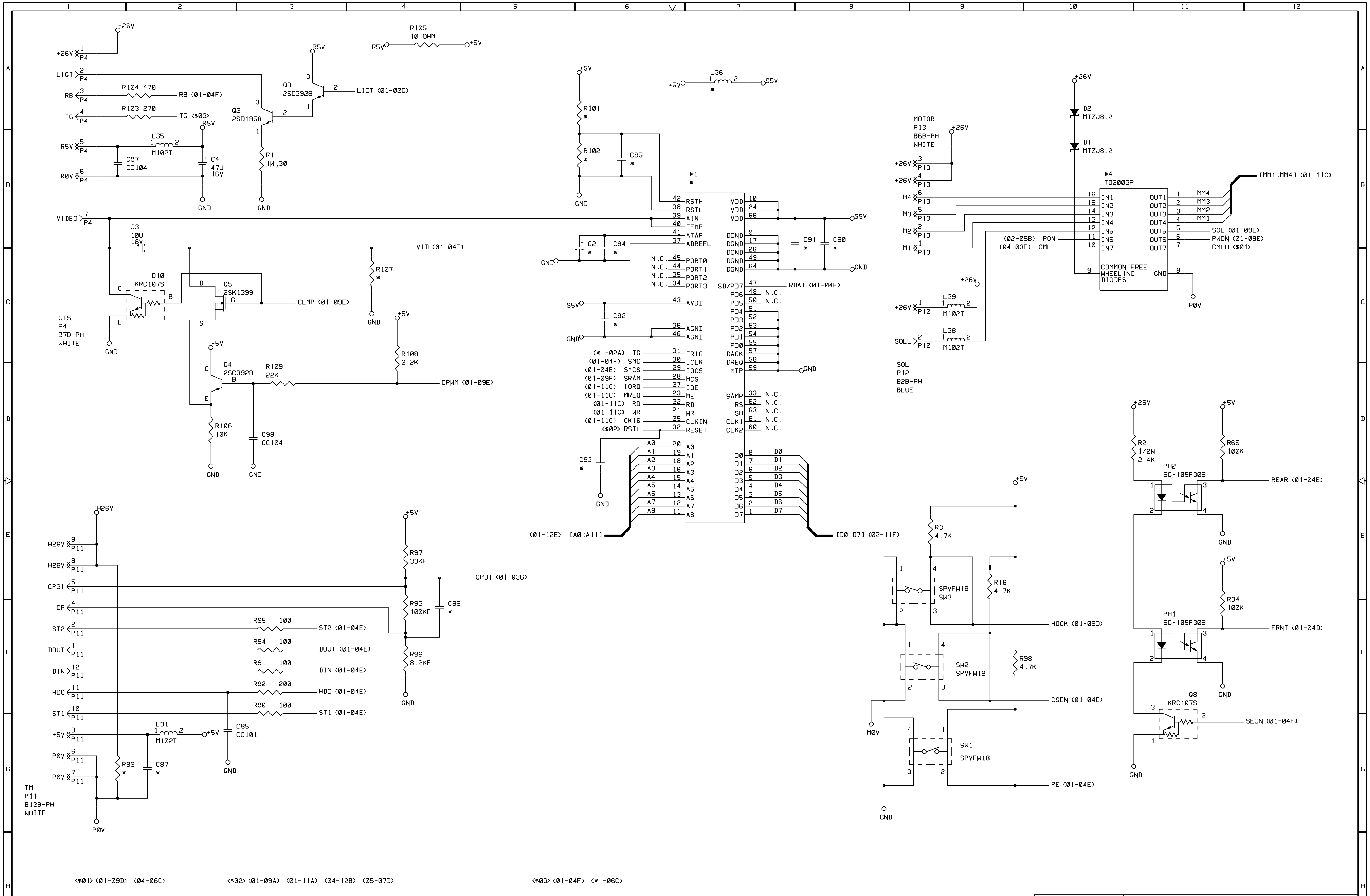
A

Main PCB 1/5 (FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)


GND P5 1
P0V P5 2
P0V P5 3
+26V P5 4
+26V P5 5
+8V P5 6
POWER SUPPLY
P5
B8B-PH
RED
R89 *
C5 47U 35V
C83 *
C7 47U 16V
GND
P0V
+26V
+8V
CR1
OJE-SH-124DM
H26V
PON (03-10B)
Q6
7805
I G O
IN GND OUT
C73 CC104
C71 CC104
C6 33U 16V
(01-09E) EPCK
(01-09F) EPDO
R68 100
R69 100
#10
EEP16KSER
TEST VCC
SCL
VSS
A0 A1 A2
SDA
C57 CC104
R64 4.7K
+5V
#3
UPD27C2001B-15
VPP CE OE PGM
(01-09B) ROMC
(01-09B) RMRD
DA9
L30 M102T
C96 CC104
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
A09 A12 A13 A14 A15 A16 A17
DA3 DA4 DA5 DA6 DA7 DA8
O0 O1 O2 O3 O4 O5 O6 O7
D0 D1 D2 D3 D4 D5 D6 D7
(01-12E) [A0:A11]
DA1
1SS378
R100 1K
C89 CC104
Q1
VCC
RH5RA47
OUT
GND
+5B
C1 16V 47U
L33 M102T
L32 M102T
+ P3
- P3
#2
HM514800JP-10
(01-09C) BARMWE
(01-09B) RAS
(01-09B) CAS
(01-09C) BARMRD
WE RAS CAS OE
VCC VCC VSS VSS
L34 M102T
C88 CC104
DA0 DA1 DA2 DA3 DA4 DA5 DA6 DA7 DA8 DA9
I/O0 I/O1 I/O2 I/O3 I/O4 I/O5 I/O6 I/O7
NC N.C.
(01-06E) [DA0:DA9]
<$01> [D0:D7]
<$01> (01-06F) (03-08E)

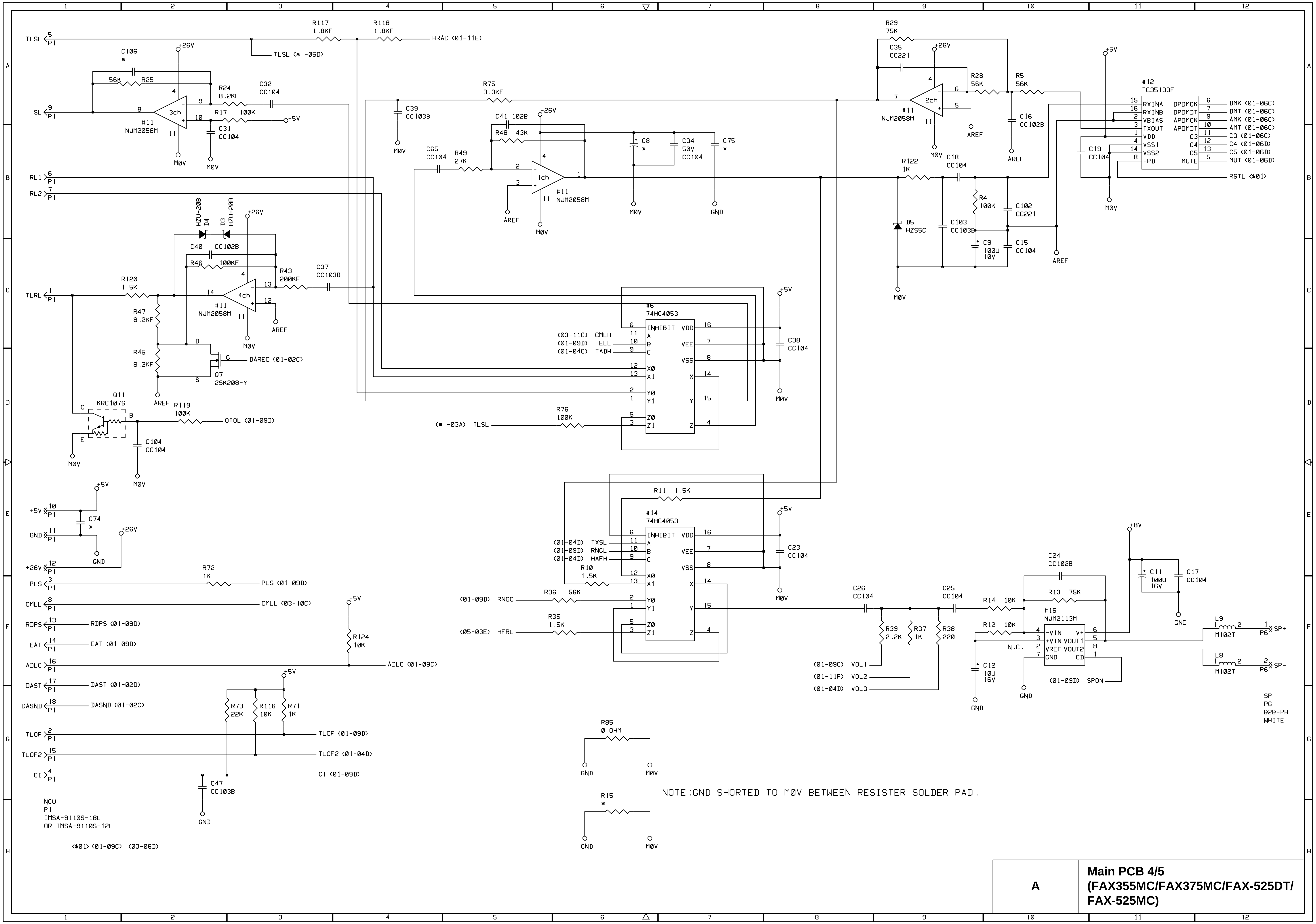
A

Main PCB 2/5 (FAX355MC/FAX375MC/FAX-525DT/ FAX-525MC)


+26V
P4
LIGT
RB
TG
R5V
R0V
R104 470
RB (01-04F)
R103 270
TG <$03>
L35
M102T
C97
CC104
C4
47U
16V
GND
Q2
2SD1858
Q3
2SC3928
LIGT (01-02C)
R1
1W,30
R105
10 OHM
+5V
VIDEO
C3
10U
16V
VID (01-04F)
R107
Q10
KRC107S
Q5
2SK1399
CLMP (01-09E)
CIS
P4
B7B-PH
WHITE
Q4
2SC3928
R109
22K
R108
2.2K
CPWM (01-09E)
R106
10K
C98
CC104
R101
R102
C95
L36
S5V
#1
RSTH
RSTL
AIN
TEMP
ATAP
ADREFL
PORT0
PORT1
PORT2
PORT3
N.C.
AVDD
AGND
TRIG
ICLK
IOCS
MCS
IOE
ME
RD
WR
CLKIN
RESET
VDD
DGND
SD/PD7
RDAT (01-04F)
PD6
PD5
PD4
PD3
PD2
PD1
PD0
DACK
DREQ
MTP
SAMP
RS
SH
CLK1
CLK2
C2
C94
C91
C90
C92
C93
(* -02A) TG
(01-04F) SMC
(01-04E) SYCS
(01-09F) SRAM
(01-11C) IORQ
(01-11C) MREQ
(01-11C) RD
(01-11C) WR
(01-11C) CK16
<$02> RSTL
A0
A1
A2
A3
A4
A5
A6
A7
A8
D0
D1
D2
D3
D4
D5
D6
D7
(01-12E) [A0:A11]
[D0:D7] (02-11F)
MOTOR
P13
B6B-PH
WHITE
+26V
M4
M3
M2
M1
D2
MTZJ8.2
D1
MTZJ8.2
#4
TD2003P
IN1
IN2
IN3
IN4
IN5
IN6
IN7
OUT1
OUT2
OUT3
OUT4
OUT5
OUT6
OUT7
COMMON FREE WHEELING DIODES
[MM1:MM4] (01-11C)
MM4
MM3
MM2
MM1
SOL (01-09E)
PWON (01-09E)
CMLH <$01>
(02-05B) PON
(04-03F) CMLL
P0V
L29
M102T
L28
M102T
SOLL
P12
SOL
P12
B2B-PH
BLUE
R2
1/2W
2.4K
PH2
SG-105F308
R65
100K
REAR (01-04E)
R34
100K
PH1
SG-105F308
FRNT (01-04D)
Q8
KRC107S
SEON (01-04F)
R3
4.7K
R16
4.7K
SPVFW18
SW3
SW2
SPVFW18
SW1
SPVFW18
R98
4.7K
HOOK (01-09D)
CSEN (01-04E)
PE (01-04E)
M0V
H26V
P11
CP31
CP
ST2
DOUT
DIN
HDC
ST1
R97
33KF
CP31 (01-03G)
R93
100KF
C86
R96
8.2KF
R95 100
ST2 (01-04E)
R94 100
DOUT (01-04E)
R91 100
DIN (01-04E)
R92 200
HDC (01-04E)
R90 100
ST1 (01-04E)
L31
M102T
C85
CC101
R99
C87
TM
P11
B12B-PH
WHITE
<$01> (01-09D) (04-06C)
<$02> (01-09A) (01-11A) (04-12B) (05-07D)
<$03> (01-04F) (* -06C)

A

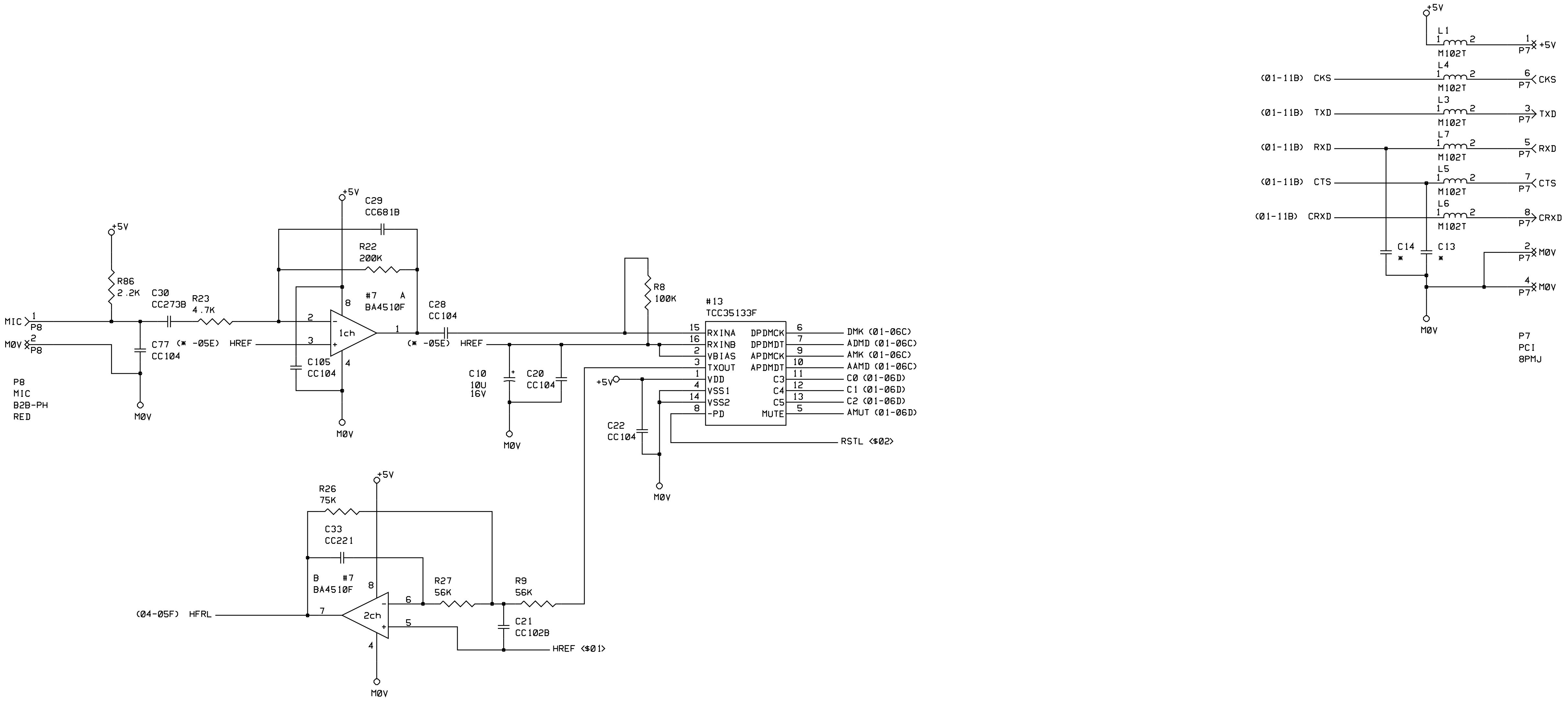
Main PCB 3/5 (FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)


TLSL
SL
RL1
RL2
TLRL
+5V
GND
+26V
PLS
CMLL
RDPS
EAT
ADLC
DAST
DASND
TLOF
TLOF2
CI
P1
R117 1.8KF
R118 1.8KF
HRAD (01-11E)
TLSL (* -05D)
C106
56K R25
R24 8.2KF
C32 CC104
R17 100K
C31 CC104
#11 NJM2058M
3ch
M0V
R75 3.3KF
C39 CC103B
C41 102B
R48 43K
C65 CC104
R49 27K
1ch
AREF
C8
C34 50V CC104
C75
R29 75K
C35 CC221
2ch
R28 56K
R5 56K
C16 CC102B
#12 TC35133F
RXINA
RXINB
VBIAS
TXOUT
VDD
VSS1
VSS2
-PD
DPDMCK
DPDMDT
APDMCK
APDMDT
MUTE
DMK (01-06C)
DMT (01-06C)
AMK (01-06C)
AMT (01-06C)
C3 (01-06C)
C4 (01-06D)
C5 (01-06D)
MUT (01-06D)
RSTL <$01>
C19 CC104
R122 1K
C18 CC104
R4 100K
C102 CC221
D5 HZS5C
C103 CC103B
C9 100U 10V
C15 CC104
D4 HZU-20B
D3 HZU-20B
C40 CC102B
R46 100KF
R43 200KF
C37 CC103B
R120 1.5K
14 4ch
R47 8.2KF
R45 8.2KF
Q7 2SK208-Y
DAREC (01-02C)
Q11 KRC107S
R119 100K
OTOL (01-09D)
C104 CC104
#6 74HC4053
INHIBIT
(03-11C) CMLH
(01-09D) TELL
(01-04C) TADH
X0
X1
Y0
Y1
Z0
Z1
VEE
VSS
C38 CC104
R76 100K
(* -03A) TLSL
C74
R72 1K
PLS (01-09D)
CMLL (03-10C)
RDPS (01-09D)
EAT (01-09D)
R124 10K
ADLC (01-09C)
DAST (01-02D)
DASND (01-02C)
R73 22K
R116 10K
R71 1K
TLOF (01-09D)
TLOF2 (01-04D)
CI (01-09D)
C47 CC103B
NCU
P1
IMSA-9110S-18L
OR IMSA-9110S-12L
<$01> (01-09C) (03-06D)
R11 1.5K
#14 74HC4053
(01-04D) TXSL
(01-09D) RNGL
(01-04D) HAFH
R10 1.5K
C23 CC104
(01-09D) RNGO
R36 56K
(05-03E) HFRL
R35 1.5K
C26 CC104
C25 CC104
R39 2.2K
R37 1K
R38 220
(01-09C) VOL1
(01-11F) VOL2
(01-04D) VOL3
C24 CC102B
R13 75K
R14 10K
R12 10K
#15 NJM2113M
-VIN
+VIN
VREF
V+
VOUT1
VOUT2
CD
N.C.
C12 10U 16V
(01-09D) SPON
+8V
C11 100U 16V
C17 CC104
L9 M102T
L8 M102T
P6
SP+
SP-
SP
P6
B2B-PH
WHITE
R85 0 OHM
R15

NOTE:GND SHORTED TO M0V BETWEEN RESISTER SOLDER PAD.

A

Main PCB 4/5 (FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)



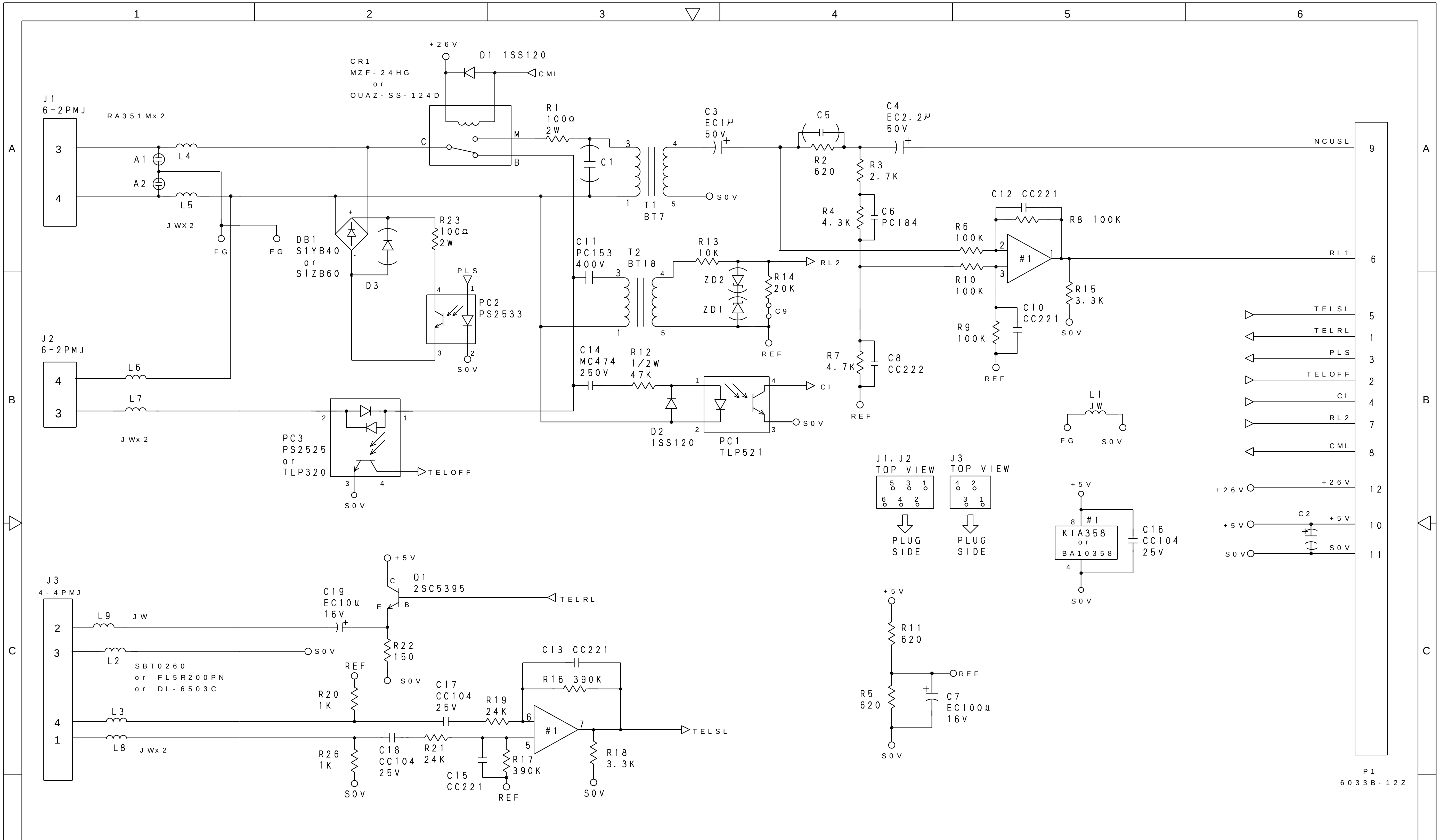
+5V
R86
2.2K
MIC
P8
M0V
C30
CC273B
R23
4.7K
C77 (* -05E)
CC104
HREF
P8
MIC
B2B-PH
RED
+5V
C29
CC681B
R22
200K
#7 A
BA4510F
1ch
C105
CC104
C28
CC104
(* -05E) HREF
C10
10U
16V
C20
CC104
R8
100K
#13
TCC35133F
RXINA
RXINB
VBIAS
TXOUT
VDD
VSS1
VSS2
-PD
DPDMCK
DPDMDT
APDMCK
APDMDT
C3
C4
C5
MUTE
DMK (01-06C)
ADMD (01-06C)
AMK (01-06C)
AAMD (01-06C)
C0 (01-06D)
C1 (01-06D)
C2 (01-06D)
AMUT (01-06D)
RSTL <$02>
C22
CC104
R26
75K
C33
CC221
B #7
BA4510F
2ch
(04-05F) HFRL
R27
56K
R9
56K
C21
CC102B
HREF <$01>
L1
M102T
+5V
(01-11B) CKS
L4
CKS
(01-11B) TXD
L3
TXD
(01-11B) RXD
L7
RXD
(01-11B) CTS
L5
CTS
(01-11B) CRXD
L6
CRXD
C14
C13
M0V
P7
P7
PCI
8PMJ

<$01> (* -03D) (* -04D)

<$02> (01-09C) (03-06D)

A

Main PCB 5/5 (FAX355MC/FAX375MC/FAX-525DT/FAX-525MC)


J1
6-2PMJ
RA351Mx2
A1
A2
L4
L5
JWX2
FG
FG
CR1
MZF-24HG
or
OUAZ-SS-124D
+26V
D1 1SS120
CML
C
M
B
R1
100Ω
2W
C1
DB1
S1YB40
or
S1ZB60
D3
R23
100Ω
2W
PLS
PC2
PS2533
S0V
C3
EC1μ
50V
T1
BT7
S0V
C11
PC153
400V
T2
BT18
R13
10K
RL2
ZD2
ZD1
R14
20K
C9
REF
C14
MC474
250V
R12
1/2W
47K
PC1
TLP521
CI
S0V
D2
1SS120
J2
6-2PMJ
L6
L7
JWx2
PC3
PS2525
or
TLP320
TELOFF
S0V
C5
R2
620
C4
EC2.2μ
50V
R3
2.7K
R4
4.3K
C6
PC184
C12 CC221
R8 100K
R6
100K
R10
100K
#1
R15
3.3K
S0V
R9
100K
C10
CC221
REF
R7
4.7K
C8
CC222
REF
NCUSL
RL1
TELSL
TELRL
PLS
TELOFF
CI
RL2
CML
+26V
+5V
S0V
C2
P1
6033B-12Z
L1
JW
FG
S0V
J1, J2
TOP VIEW
PLUG SIDE
J3
TOP VIEW
PLUG SIDE
+5V
KIA358
or
BA10358
#1
C16
CC104
25V
S0V
J3
4-4PMJ
L9
JW
L2
SBT0260
or FL5R200PN
or DL-6503C
L3
L8
JWx2
+5V
Q1
2SC5395
C19
EC10μ
16V
R22
150
S0V
S0V
REF
R20
1K
C17
CC104
25V
R19
24K
C13 CC221
R16 390K
#1
TELSL
R26
1K
S0V
C18
CC104
25V
R21
24K
C15
CC221
R17
390K
REF
R18
3.3K
S0V
+5V
R11
620
REF
R5
620
C7
EC100μ
16V
S0V

7. MC：メタライズフィルムコンデンサ（METALLIZED POLYESTER FILM CAPACITOR）

6. PC：ポリエステルフィルムコンデンサ（POLYESTER FILM CAPACITOR）

5. CC：セラミックコンデンサ（CERAMIC CAPACITOR）

4. EC：電解コンデンサ（ALUMINUM ELECTROLYTIC CAPACITOR）

3. COMPONENTS IN PARENTHESIS NOT TO BE MOUNTED.

3. （ ）内ノ部品ハ未実装トスル。

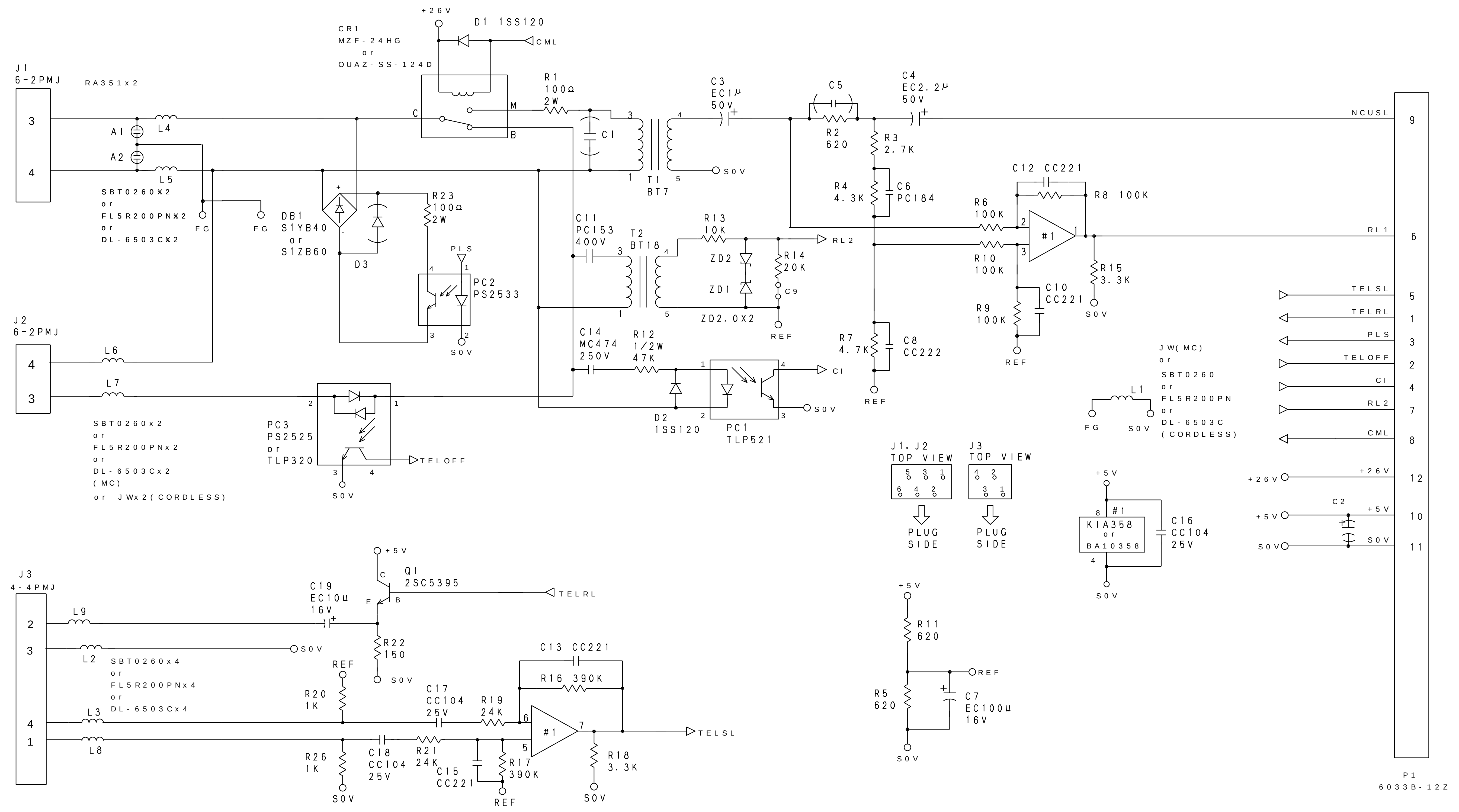
2. UNLESS OTHERWISE SPECIFIED, THE VOLTAGE RESISTANCE OF CAPACITORS IS 25V OR 50V.

2. 指示ナキコンデ゛ンサモノ耐圧ハ25V又ハ50Vトスル。

1. UNLESS OTHERWISE SPECIFIED, POWER CONSUMPTION OF RESISTORS IS 1/4W.

1. 指示ナキ抵抗ノ消費電力ハ1/4Wトスル。

B	**NCU PCB** **(FAX255/FAX275)** **(U.S.A., CANADA, GULF, SOUTH AMERICA, BRAZIL)**


J1
6-2PMJ
RA351x2
3
4
A1
A2
L4
L5
SBT0260X2
or
FL5R200PNX2
or
DL-6503CX2
FG
FG
CR1
MZF-24HG
or
OUAZ-SS-124D
+26V
D1 1SS120
CML
C
M
B
R1
100Ω
2W
C1
C3
EC1μ
50V
T1
BT7
S0V
C5
R2
620
R3
2.7K
C4
EC2.2μ
50V
NCUSL
R4
4.3K
C6
PC184
C12 CC221
R8 100K
R6
100K
R10
100K
#1
RL1
R15
3.3K
C10
CC221
R9
100K
REF
DB1
S1YB40
or
S1ZB60
D3
R23
100Ω
2W
PLS
PC2
PS2533
C11
PC153
400V
T2
BT18
R13
10K
RL2
ZD2
ZD1
R14
20K
C9
ZD2.0X2
REF
R7
4.7K
C8
CC222
REF
J2
6-2PMJ
L6
L7
C14
MC474
250V
R12
1/2W
47K
CI
PC1
TLP521
D2
1SS120
S0V
PC3
PS2525
or
TLP320
TELOFF
SBT0260x2
or
FL5R200PNx2
or
DL-6503Cx2
(MC)
or JWx2(CORDLESS)
J1, J2
TOP VIEW
J3
TOP VIEW
PLUG
SIDE
PLUG
SIDE
JW(MC)
or
SBT0260
or
FL5R200PN
or
DL-6503C
(CORDLESS)
L1
FG
S0V
+5V
#1
KIA358
or
BA10358
C16
CC104
25V
TELSL
TELRL
PLS
TELOFF
CI
RL2
CML
+26V
+5V
S0V
C2
P1
6033B-12Z
J3
4-4PMJ
L9
L2
L3
L8
SBT0260x4
or
FL5R200PNx4
or
DL-6503Cx4
+5V
Q1
2SC5395
TELRL
C19
EC10μ
16V
R22
150
S0V
REF
R20
1K
C13 CC221
R16 390K
C17
CC104
25V
R19
24K
#1
TELSL
R18
3.3K
R26
1K
C18
CC104
25V
R21
24K
C15
CC221
R17
390K
REF
S0V
R11
620
REF
R5
620
C7
EC100μ
16V

7. MC：メタライズフィルムコンデンサ(METALLIZED POLYESTER FILM CAPACITOR)

6. PC：ポリエステルフィルムコンデンサ(POLYESTER FILM CAPACITOR)

5. CC：セラミックコンデンサ(CERAMIC CAPACITOR)

4. EC：電解コンデンサ(ALUMINUM ELECTROLYTIC CAPACITOR)

3. COMPONENTS IN PARENTHESIS NOT TO BE MOUNTED.

3. ( )内ノ部品ハ未実装トスル。

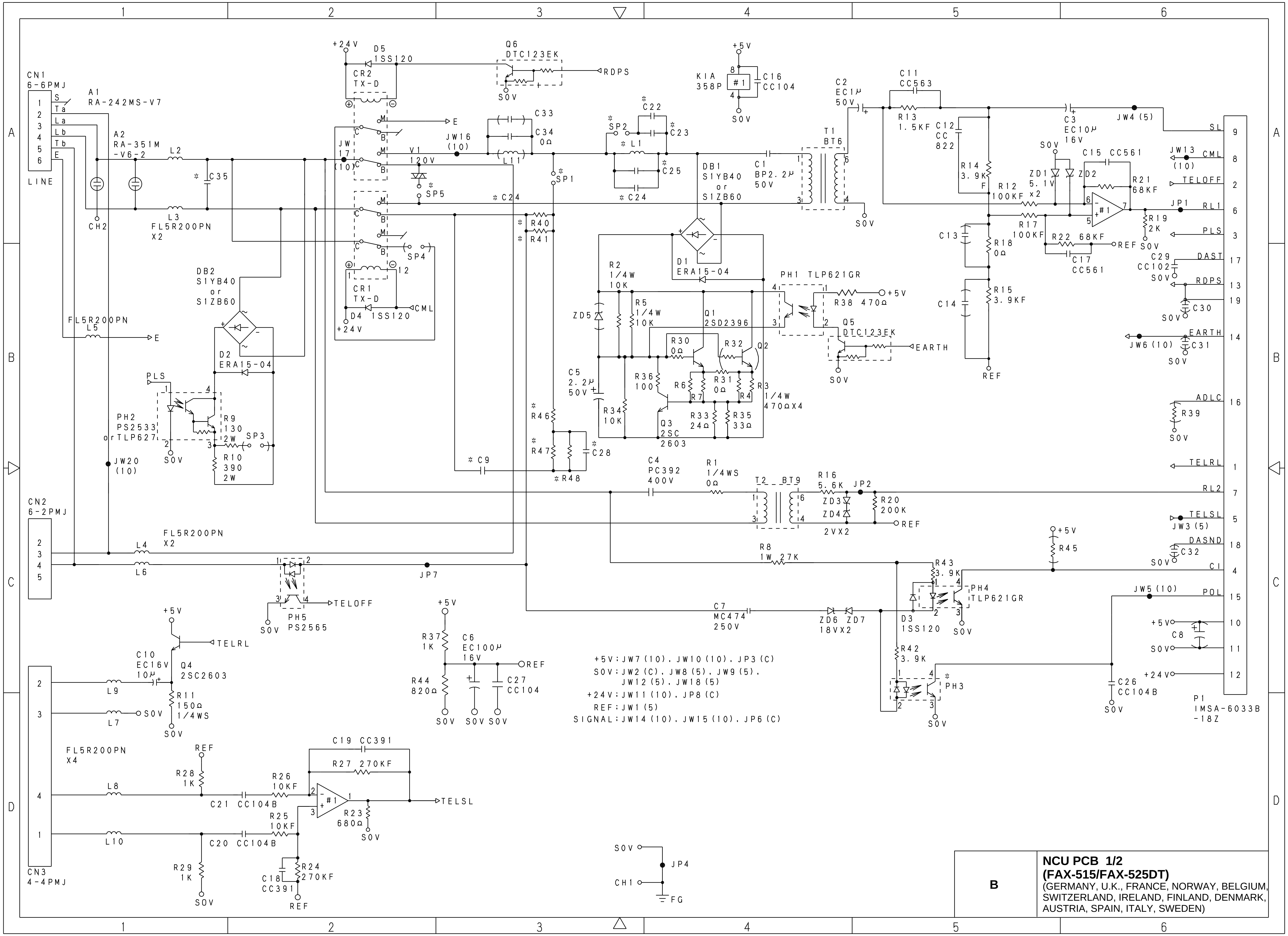
2. UNLESS OTHERWISE SPECIFIED, THE VOLTAGE RESISTANCE OF CAPACITORS IS 25V OR 50V.

2. 指示ナキコンデ゛ンサモノ耐圧ハ25V又ハ50Vトスル。

1. UNLESS OTHERWISE SPECIFIED, POWER CONSUMPTION OF RESISTORS IS 1/4W.

1. 指示ナキ抵抗ノ消費電力ハ1/4Wトスル。

B	**NCU PCB (FAX355MC/FAX375MC)** **(U.S.A., CANADA, GULF, SOUTH AMERICA, BRAZIL)**


1
2
3
4
5
6
A
B
C
D
CN1
6-6PMJ
S
Ta
La
Lb
Tb
E
LINE
A1
RA-242MS-V7
A2
RA-351M
-V6-2
CH2
L2
L3
FL5R200PN
X2
※C35
+24V
D5
1SS120
CR2
TX-D
Q6
DTC123EK
RDPS
S0V
M
C
B
E
JW
17
(10)
V1
120V
JW16
(10)
※SP5
C33
C34
0Ω
L11
※C24
※C22
※C23
※SP2
※L1
※C25
※C24
※SP1
R40
R41
CR1
TX-D
D4 1SS120
CML
+24V
SP4
KIA
358P
#1
C16
CC104
+5V
DB1
S1YB40
or
S1ZB60
C1
BP2.2μ
50V
T1
BT6
C2
EC1μ
50V
C11
CC563
R13
1.5KF
C12
CC
822
R14
3.9K
F
R12
100KF
x2
R17
100KF
C13
R18
0Ω
C14
R15
3.9KF
REF
C3
EC10μ
16V
JW4(5)
ZD1
5.1V
ZD2
C15 CC561
R21
68KF
R22 68KF
C17
CC561
R19
2K
JP1
DB2
S1YB40
or
S1ZB60
D2
ERA15-04
L5
FL5R200PN
D1
ERA15-04
R2
1/4W
10K
ZD5
R5
1/4W
10K
Q1
2SD2396
PH1 TLP621GR
R38 470Ω
Q5
DTC123EK
EARTH
R30
0Ω
R32
Q2
R36
100
R6
R31
0Ω
R7
R4
R3
1/4W
470Ω X4
C5
2.2μ
50V
R34
10K
Q3
2SC
2603
R33
24Ω
R35
33Ω
※R46
※R47
※C28
※R48
PLS
PH2
PS2533
or TLP627
R9
130
2W
SP3
R10
390
2W
JW20
(10)
※C9
C4
PC392
400V
R1
1/4WS
0Ω
T2 BT9
R16
5.6K
JP2
ZD3
ZD4
2VX2
R20
200K
CN2
6-2PMJ
L4
L6
FL5R200PN
X2
PH5
PS2565
TELOFF
JP7
R8
1W 27K
R43
3.9K
PH4
TLP621GR
D3
1SS120
C7
MC474
250V
ZD6 ZD7
18VX2
R45
R42
3.9K
※PH3
C26
CC104B
+5V
TELRL
C10
EC16V
10μ
Q4
2SC2603
R11
150Ω
1/4WS
CN3
4-4PMJ
L9
L7
L8
L10
FL5R200PN
X4
R37
1K
C6
EC100μ
16V
R44
820Ω
C27
CC104
C19 CC391
R27 270KF
R28
1K
R26
10KF
C21 CC104B
R25
10KF
C20 CC104B
R23
680Ω
TELSL
R29
1K
C18
CC391
R24
270KF
JP4
CH1
FG
P1
IMSA-6033B
-18Z
SL 9
JW13
(10)
CML 8
TELOFF 2
RL1 6
PLS 3
DAST 17
C29
CC102
RDPS 13
C30
19
JW6(10)
EARTH 14
C31
ADLC 16
R39
TELRL 1
RL2 7
TELSL 5
JW3(5)
DASND 18
C32
CI 4
JW5(10)
POL 15
C8
+5V 10
S0V 11
+24V 12

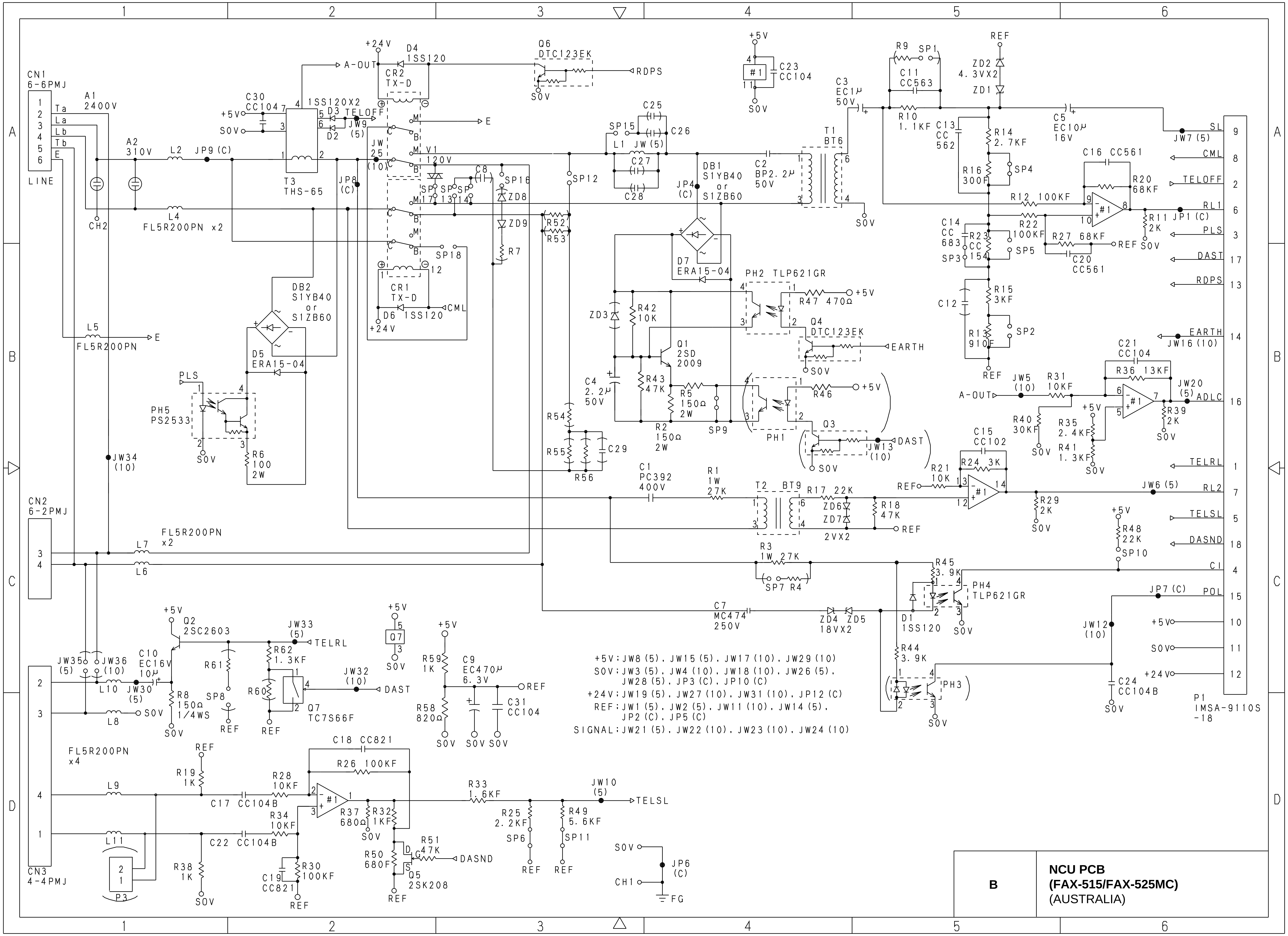
+5V: JW7(10), JW10(10), JP3(C)
S0V: JW2(C), JW8(5), JW9(5),
JW12(5), JW18(5)
+24V: JW11(10), JP8(C)
REF: JW1(5)
SIGNAL: JW14(10), JW15(10), JP6(C)

B

NCU PCB 1/2
(FAX-515/FAX-525DT)
(GERMANY, U.K., FRANCE, NORWAY, BELGIUM,
SWITZERLAND, IRELAND, FINLAND, DENMARK,
AUSTRIA, SPAIN, ITALY, SWEDEN)

ITEM	03	10	04	13	07	26	09
	GER	SWI	UK/FRA	DEN	Other Countries	SWE	HOL
L1	UG6884-000 **Coil** DRL-0033P		5mm Jumper	5mm Jumper		5mm Jumper	
PH3	Not Assy		UG6797-000 Photocoupler TLP620GR	Not Assy		UG6797-000 **Photocoupler** TLP620GR	
PH2	643949-000 **Photocoupler** ILP627		UG6702-000 Photocoupler PS2533-1	UG6702-000 **Photocoupler** PS2533-1		UG6702-000 **Photocoupler** PS2533-1	
V1	U84397000 **Varistor** ENC121D07A		Not Assy	U84397000 **Varistor** ENC121D07A		U84397000 **Varistor** ENC121D07A	
C9	Not Assy		Y51053-060 Polyester film C250B105	Not Assy		Not Assy	
C22	Y88220-010 **Ceramic** C50C822B		Not Assy	Not Assy		Not Assy	
C23, C24 C25	UG6927-000 **Ceramic** C50C153BJ		Not Assy	Not Assy		Not Assy	
C35	Not Assy		UG3704-000 Ceramic C250B332KH	Not Assy		Not Assy	
R46	Not Assy		094821-120 GR-C110J821	Not Assy		Not Assy	
R47, R48	Not Assy		094202-120 GR-C110J202	Not Assy		Not Assy	
C28	Not Assy		Y81540-011 Ceramic C50C154B	Not Assy		Not Assy	
R40, R41	Not Assy		Not Assy	Not Assy		094204-120 GR-C110J204	
SP1	Not Assy		Assy	Not Assy		Not Assy	Assy
SP2	Not Assy	Assy	Not Assy	Not Assy		Not Assy	
SP5	Assy		Not Assy	Not Assy	Assy	Assy	

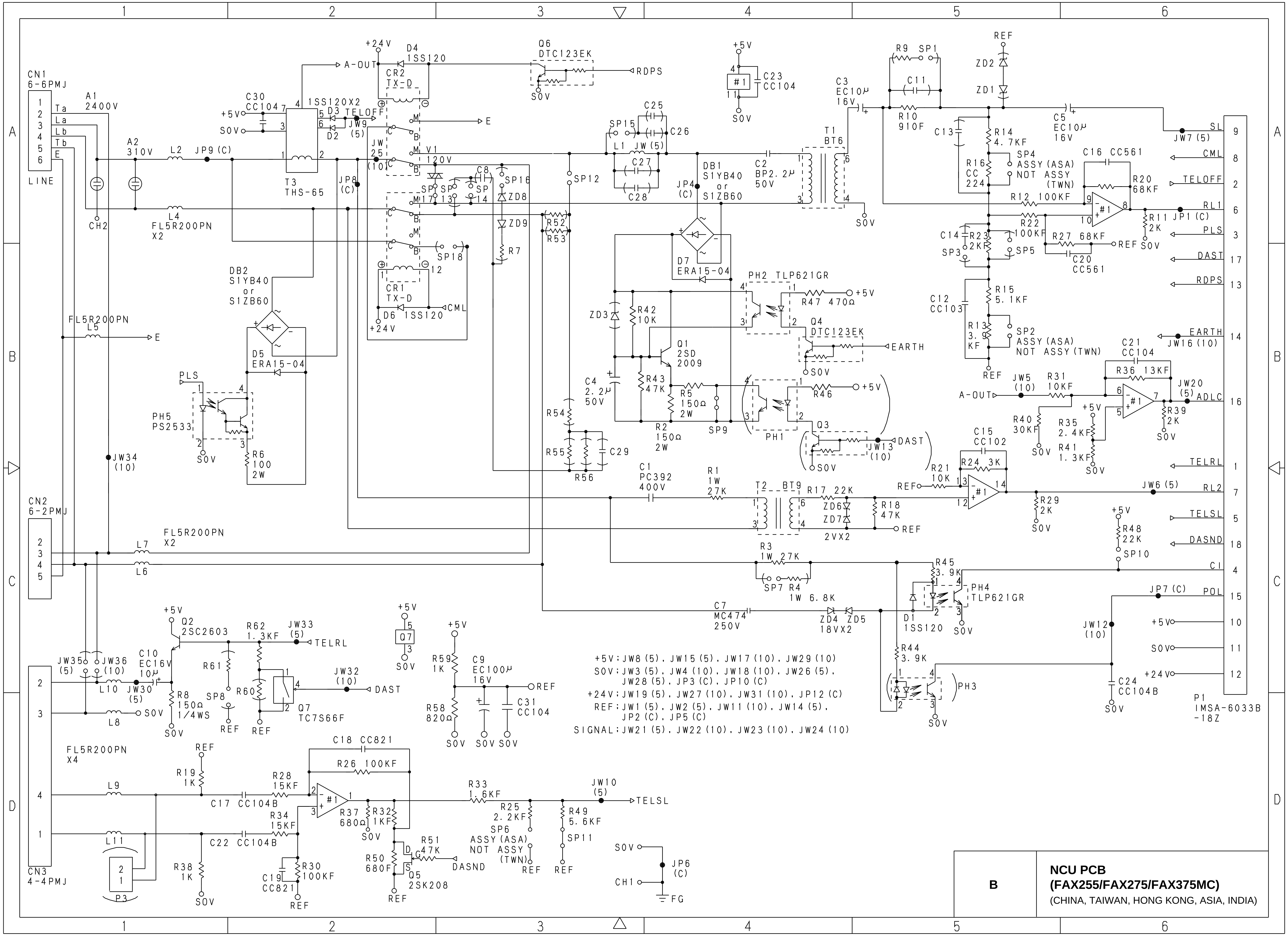
B	**NCU PCB 2/2** **(FAX-515/FAX-525DT)** (GERMANY, U.K., FRANCE, NORWAY, BELGIUM, SWITZERLAND, IRELAND, FINLAND, DENMARK, AUSTRIA, SPAIN, ITALY, SWEDEN)


CN1
6-6PMJ
Ta
La
Lb
Tb
E
LINE
A1
2400V
A2
310V
L2
JP9 (C)
L4
FL5R200PN x2
CH2
L5
FL5R200PN
E
JW34
(10)
CN2
6-2PMJ
L7
FL5R200PN
x2
L6
CN3
4-4PMJ
JW35
(5)
JW36
(10)
L10
L8
L9
L11
P3
FL5R200PN
x4
C30
CC104
+5V
S0V
T3
THS-65
1SS120X2
D3
D2
TELOFF
JW9
(5)
A-OUT
+24V
D4
1SS120
CR2
TX-D
Q6
DTC123EK
RDPS
JW
25
(10)
JP8
(C)
V1
120V
C8
SP16
ZD8
ZD9
R7
SP18
SP13
SP14
SP17
CR1
TX-D
D6 1SS120
CML
DB2
S1YB40
or
S1ZB60
D5
ERA15-04
PLS
PH5
PS2533
R6
100
2W
R52
R53
SP12
R54
R55
R56
C29
SP15
L1
JW (5)
C25
C26
C27
C28
C2
BP2.2μ
50V
DB1
S1YB40
or
S1ZB60
JP4
(C)
D7
ERA15-04
ZD3
R42
10K
Q1
2SD
2009
C4
2.2μ
50V
R43
47K
R5
150Ω
2W
R2
150Ω
2W
SP9
PH2 TLP621GR
R47 470Ω
Q4
DTC123EK
EARTH
PH1
R46
Q3
DAST
JW13
(10)
C1
PC392
400V
R1
1W
27K
T2 BT9
R17 22K
ZD6
ZD7
2VX2
R18
47K
REF
R3
1W 27K
SP7 R4
R45
3.9K
PH4
TLP621GR
D1
1SS120
C7
MC474
250V
ZD4
ZD5
18VX2
R44
3.9K
PH3
+5V
#1
C23
CC104
C3
EC1μ
50V
T1
BT6
R9
SP1
C11
CC563
R10
1.1KF
C13
CC
562
REF
ZD2
4.3VX2
ZD1
R14
2.7KF
SP4
R16
300F
C5
EC10μ
16V
C16 CC561
R20
68KF
R12 100KF
R11
2K
JP1 (C)
C14
CC
683
R23
CC
154
SP3
R22
100KF
SP5
R27 68KF
C20
CC561
R15
3KF
C12
R13
910F
SP2
JW7 (5)
JW16 (10)
C21
CC104
R36 13KF
JW20
(5)
JW5
(10)
R31
10KF
R40
30KF
R35
2.4KF
R41
1.3KF
R39
2K
C15
CC102
R24 3K
R21
10K
R29
2K
JW6 (5)
R48
22K
SP10
JP7 (C)
JW12
(10)
C24
CC104B
P1
IMSA-9110S
-18
SL
CML
TELOFF
RL1
PLS
DAST
RDPS
EARTH
ADLC
TELRL
RL2
TELSL
DASND
CI
POL
+5V
S0V
+24V
Q2
2SC2603
JW33
(5)
TELRL
C10
EC16V
10μ
JW30
(5)
R8
150Ω
1/4WS
R61
SP8
R62
1.3KF
R60
Q7
TC7S66F
JW32
(10)
DAST
R59
1K
C9
EC470μ
6.3V
R58
820Ω
C31
CC104
C18 CC821
R26 100KF
R19
1K
R28
10KF
C17 CC104B
R34
10KF
C22 CC104B
R38
1K
C19
CC821
R30
100KF
R37
680Ω
R32
1KF
R50
680F
R51
47K
DASND
Q5
2SK208
R33
1.6KF
R25
2.2KF
SP6
R49
5.6KF
SP11
JW10
(5)
TELSL
JP6
(C)
CH1
FG
1
2
3
4
5
6
A
B
C
D

+5V:JW8(5), JW15(5), JW17(10), JW29(10)
S0V:JW3(5), JW4(10), JW18(10), JW26(5),
JW28(5), JP3(C), JP10(C)
+24V:JW19(5), JW27(10), JW31(10), JP12(C)
REF:JW1(5), JW2(5), JW11(10), JW14(5),
JP2(C), JP5(C)
SIGNAL:JW21(5), JW22(10), JW23(10), JW24(10)

B

NCU PCB
(FAX-515/FAX-525MC)
(AUSTRALIA)


CN1
6-6PMJ
Ta
La
Lb
Tb
E
LINE
A1
2400V
A2
310V
L2
JP9 (C)
CH2
L4
FL5R200PN
X2
C30
CC104
+5V
S0V
T3
THS-65
1SS120X2
D3
D2
TELOFF
JW9 (5)
+24V
D4
1SS120
A-OUT
CR2
TX-D
JW 25 (10)
V1
120V
JP8 (C)
Q6
DTC123EK
RDPS
C8
SP16
SP 13
SP 14
ZD8
ZD9
R7
R52
R53
SP18
CR1
TX-D
D6 1SS120
CML
12
DB2
S1YB40
or
S1ZB60
D5
ERA15-04
FL5R200PN
L5
E
PLS
PH5
PS2533
R6
100
2W
JW34
(10)
CN2
6-2PMJ
FL5R200PN
X2
L7
L6
SP15
C25
C26
L1
JW (5)
C27
C28
SP12
DB1
S1YB40
or
S1ZB60
JP4 (C)
C2
BP2.2µ
50V
T1
BT6
#1
C23
CC104
C3
EC10µ
16V
D7
ERA15-04
PH2 TLP621GR
R47 470Ω
ZD3
R42
10K
Q1
2SD
2009
Q4
DTC123EK
EARTH
C4
2.2µ
50V
R43
47K
R5
150Ω
2W
R2
150Ω
2W
SP9
PH1
R46
Q3
JW13
(10)
DAST
R54
R55
R56
C29
C1
PC392
400V
R1
1W
27K
T2
BT9
R17 22K
ZD6
ZD7
2VX2
R18
47K
REF
R3
1W 27K
SP7 R4
1W 6.8K
C7
MC474
250V
ZD4 ZD5
18VX2
D1
1SS120
R45
3.9K
PH4
TLP621GR
R44
3.9K
PH3
R9 SP1
C11
R10
910F
REF
ZD2
ZD1
C13
R14
4.7KF
R16
CC
224
SP4
ASSY (ASA)
NOT ASSY
(TWN)
C5
EC10µ
16V
C16 CC561
R20
68KF
R12 100KF
R11
2K
JP1 (C)
C14
R23
2KF
R22
100KF
R27 68KF
SP3
SP5
C20
CC561
C12
CC103
R15
5.1KF
R13
3.9KF
SP2
ASSY (ASA)
NOT ASSY (TWN)
C21
CC104
R36 13KF
JW5
(10)
R31
10KF
JW20
(5)
R40
30KF
R35
2.4KF
R41
1.3KF
R39
2K
C15
CC102
R24 3K
R21
10K
R29
2K
JW6 (5)
+5V
R48
22K
SP10
JP7 (C)
JW12
(10)
C24
CC104B
JW7 (5)
JW16 (10)
SL
CML
TELOFF
RL1
PLS
DAST
RDPS
EARTH
ADLC
TELRL
RL2
TELSL
DASND
CI
POL
+5V
S0V
+24V
P1
IMSA-6033B
-18Z
JW35
(5)
JW36
(10)
C10
EC16V
10µ
L10
JW30
(5)
R8
150Ω
1/4WS
L8
Q2
2SC2603
R62
1.3KF
JW33
(5)
TELRL
R61
SP8
R60
Q7
TC7S66F
JW32
(10)
DAST
Q7
R59
1K
C9
EC100µ
16V
C31
CC104
R58
820Ω
CN3
4-4PMJ
FL5R200PN
X4
L9
L11
P3
REF
R19
1K
C17 CC104B
R28
15KF
C18 CC821
R26 100KF
R34
15KF
C22 CC104B
R38
1K
C19
CC821
R30
100KF
R37
680Ω
R32
1KF
R50
680F
Q5
2SK208
R51
47K
DASND
R33
1.6KF
R25
2.2KF
SP6
ASSY (ASA)
NOT ASSY
(TWN)
JW10
(5)
TELSL
R49
5.6KF
SP11
JP6
(C)
CH1
FG

+5V: JW8 (5), JW15 (5), JW17 (10), JW29 (10)
S0V: JW3 (5), JW4 (10), JW18 (10), JW26 (5),
JW28 (5), JP3 (C), JP10 (C)
+24V: JW19 (5), JW27 (10), JW31 (10), JP12 (C)
REF: JW1 (5), JW2 (5), JW11 (10), JW14 (5),
JP2 (C), JP5 (C)
SIGNAL: JW21 (5), JW22 (10), JW23 (10), JW24 (10)

B

NCU PCB
(FAX255/FAX275/FAX375MC)
(CHINA, TAIWAN, HONG KONG, ASIA, INDIA)

1. 指示ナキ抵抗ノ消費電力ハ1／4Wトスル。

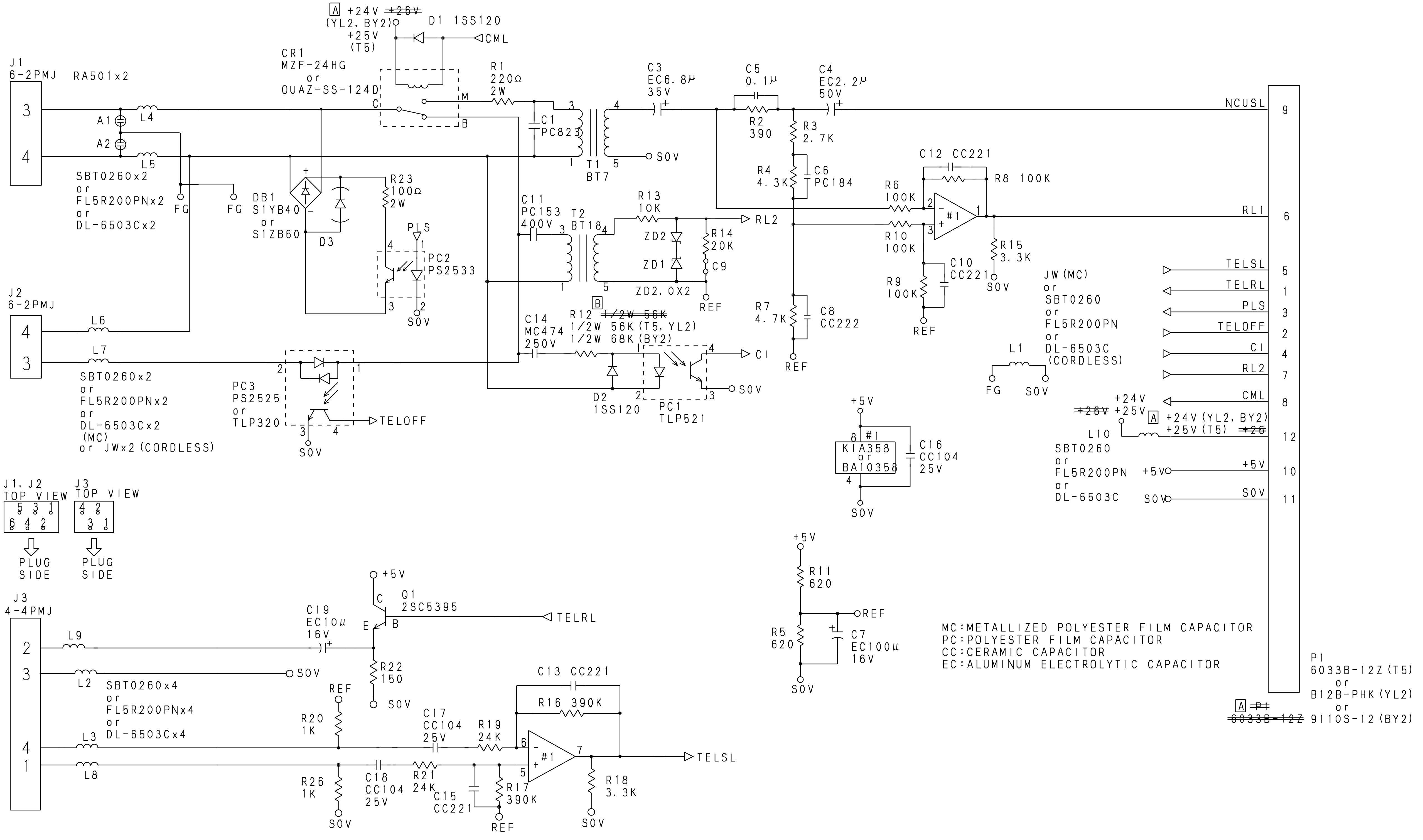
1. UNLESS OTHERWISE SPECIFIED, POWER CONSUMPTION OF RESISTORS IS 1/4W.

2. 指示ナキコンデンサモノ耐圧ハ25V又ハ50Vトスル。

2. UNLESS OTHERWISE SPECIFIED, THE VOLTAGE RESISTANCE OF CAPACITORS IS 25V OR 50V.

3. （ ）内ノ部品ハ未実装トスル。

3. COMPONENTS IN PARENTHESIS NOT TO BE MOUNTED.


A +24V ~~+26V~~ (YL2, BY2)
+25V (T5)
D1 1SS120
CML
CR1 MZF-24HG or OUAZ-SS-124D
J1 6-2PMJ
RA501x2
A1
A2
L4
L5
SBT0260x2 or FL5R200PNx2 or DL-6503Cx2
FG
FG
DB1 S1YB40 or S1ZB60
D3
R23 100Ω 2W
R1 220Ω 2W
C1 PC823
T1 BT7
C3 EC6.8μ 35V
SOV
C5 0.1μ
R2 390
R3 2.7K
C4 EC2.2μ 50V
NCUSL
R4 4.3K
C6 PC184
C12 CC221
R8 100K
R6 100K
R10 100K
#1
R15 3.3K
C10 CC221
R9 100K
REF
SOV
C11 PC153 400V
T2 BT18
R13 10K
RL2
ZD2
ZD1
R14 20K
C9
ZD2.0X2
REF
PLS
PC2 PS2533
SOV
J2 6-2PMJ
L6
L7
SBT0260x2 or FL5R200PNx2 or DL-6503Cx2 (MC) or JWx2 (CORDLESS)
C14 MC474 250V
B R12 ~~1/2W 56K~~ 1/2W 56K (T5, YL2) 1/2W 68K (BY2)
CI
SOV
D2 1SS120
PC1 TLP521
R7 4.7K
C8 CC222
REF
PC3 PS2525 or TLP320
TELOFF
SOV
JW (MC) or SBT0260 or FL5R200PN or DL-6503C (CORDLESS)
L1
FG
SOV
RL1
TELSL
TELRL
PLS
TELOFF
CI
RL2
CML
+24V ~~+26V~~ +25V
A +24V (YL2, BY2) +25V (T5) ~~+26~~
L10 SBT0260 or FL5R200PN or DL-6503C
+5V
SOV
+5V
#1 KIA358 or BA10358
C16 CC104 25V
SOV
J1, J2 TOP VIEW
J3 TOP VIEW
PLUG SIDE
PLUG SIDE
+5V
R11 620
REF
R5 620
C7 EC100μ 16V
SOV
+5V
Q1 2SC5395
TELRL
J3 4-4PMJ
L9
C19 EC10μ 16V
L2
SBT0260x4 or FL5R200PNx4 or DL-6503Cx4
SOV
R22 150
SOV
REF
R20 1K
C13 CC221
R16 390K
C17 CC104 25V
R19 24K
#1
TELSL
L3
L8
R26 1K
C18 CC104 25V
R21 24K
C15 CC221
R17 390K
R18 3.3K
REF
SOV
SOV
P1 6033B-12Z (T5) or B12B-PHK (YL2) or 9110S-12 (BY2)
A ~~P1 6033B-12Z~~

MC:METALLIZED POLYESTER FILM CAPACITOR
PC:POLYESTER FILM CAPACITOR
CC:CERAMIC CAPACITOR
EC:ALUMINUM ELECTROLYTIC CAPACITOR

B	**NCU PCB** **(FAX-525MC)** (NEW ZEALAND)

1. 指示ナキ抵抗ノ消費電力ハ1／4Wトスル。

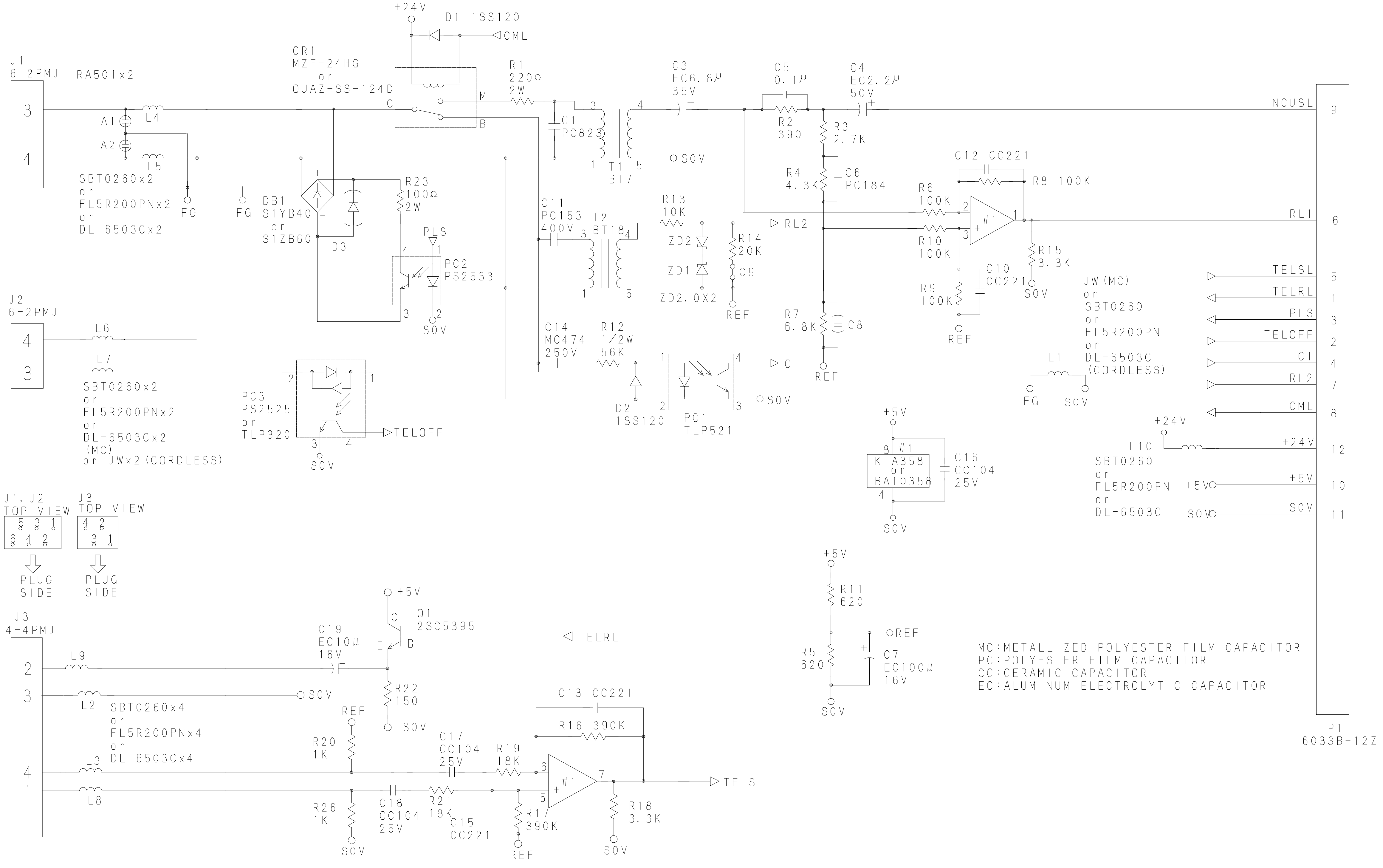
1. UNLESS OTHERWISE SPECIFIED, POWER CONSUMPTION OF RESISTORS IS 1/4W.

2. 指示ナキコンデンサモノ耐圧ハ25V又ハ50Vトスル。

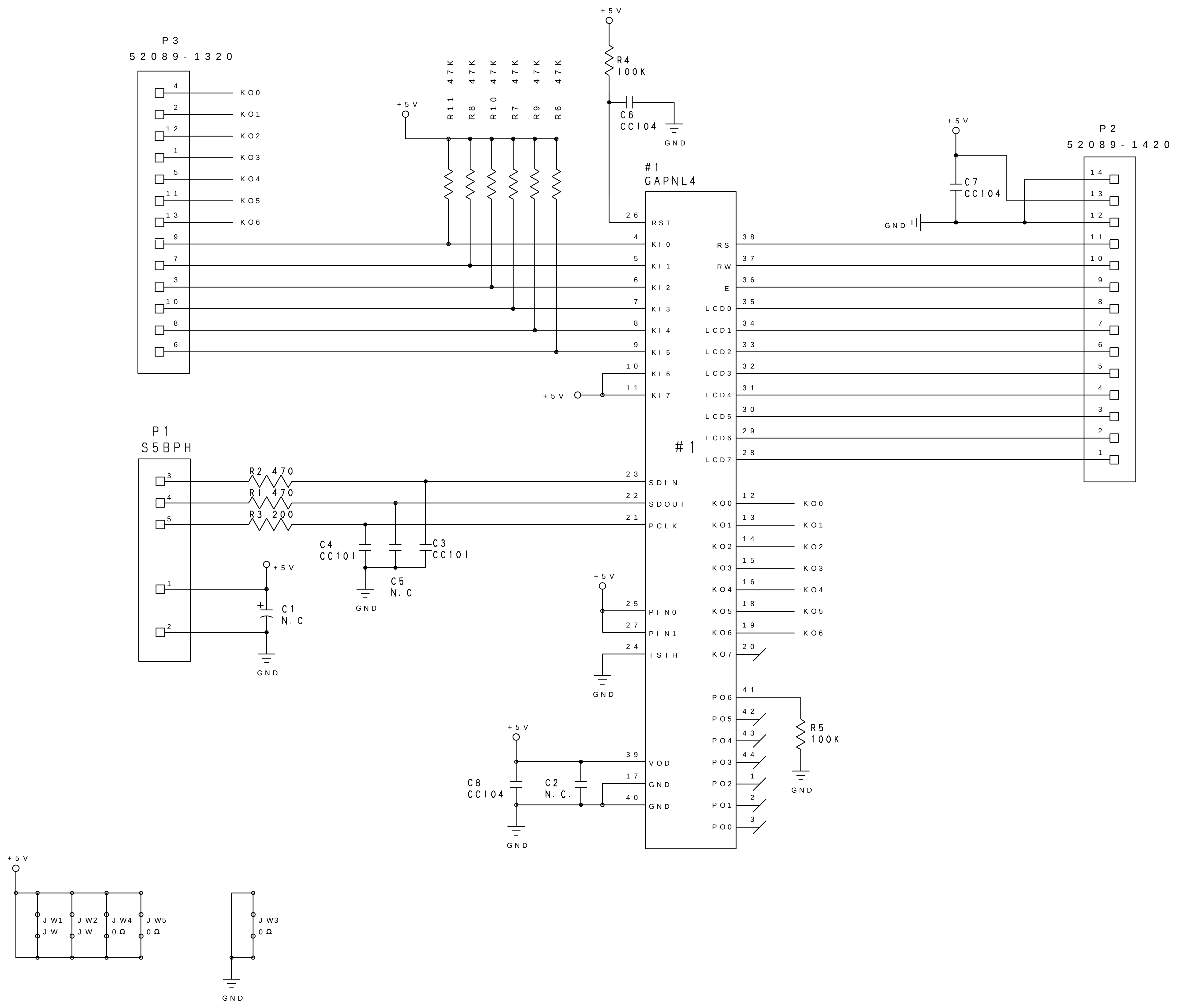
2. UNLESS OTHERWISE SPECIFIED, THE VOLTAGE RESISTANCE OF CAPACITORS IS 25V OR 50V.

3. （ ）内ノ部品ハ未実装トスル。

3. COMPONENTS IN PARENTHESIS NOT TO BE MOUNTED.

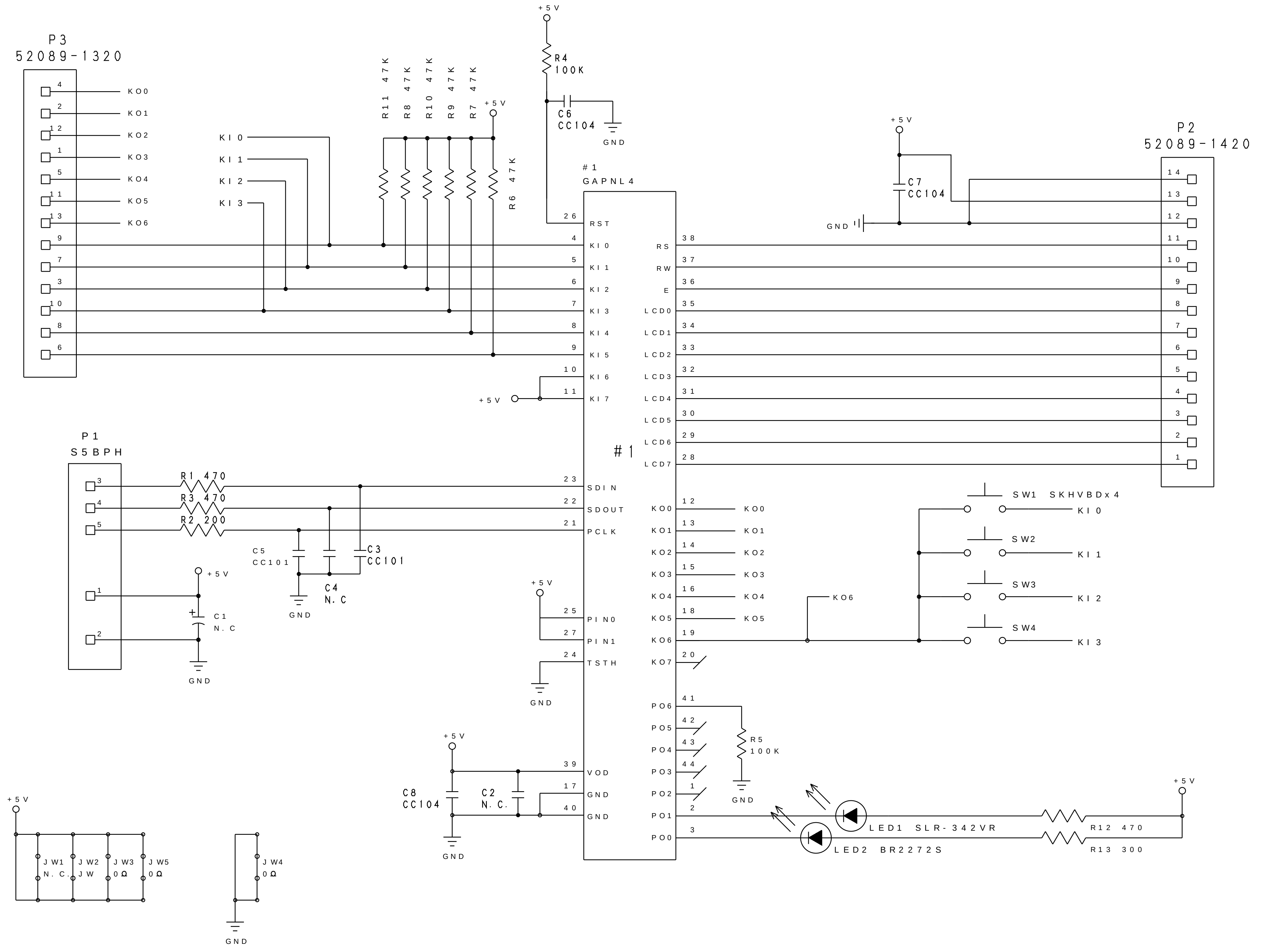

+24V
D1 1SS120
CML
J1
6-2PMJ
RA501x2
CR1
MZF-24HG
or
OUAZ-SS-124D
C
M
B
R1
220Ω
2W
C1
PC823
T1
BT7
C3
EC6.8μ
35V
C5
0.1μ
R2
390
C4
EC2.2μ
50V
R3
2.7K
NCUSL
S0V
A1
A2
L4
L5
SBT0260x2
or
FL5R200PNx2
or
DL-6503Cx2
FG
FG
DB1
S1YB40
or
S1ZB60
D3
R23
100Ω
2W
PLS
PC2
PS2533
C11
PC153
400V
T2
BT18
R13
10K
RL2
ZD2
ZD1
ZD2.0X2
R14
20K
C9
REF
R4
4.3K
C6
PC184
C12 CC221
R8 100K
R6
100K
R10
100K
#1
RL1
R15
3.3K
C10
CC221
R9
100K
REF
S0V
R7
6.8K
C8
REF
J2
6-2PMJ
L6
L7
SBT0260x2
or
FL5R200PNx2
or
DL-6503Cx2
(MC)
or JWx2 (CORDLESS)
PC3
PS2525
or
TLP320
TELOFF
S0V
C14
MC474
250V
R12
1/2W
56K
D2
1SS120
PC1
TLP521
CI
S0V
JW (MC)
or
SBT0260
or
FL5R200PN
or
DL-6503C
(CORDLESS)
L1
FG
S0V
TELSL
TELRL
PLS
TELOFF
CI
RL2
CML
+24V
L10
SBT0260
or
FL5R200PN
or
DL-6503C
+24V
+5V
+5V
S0V
S0V
P1
6033B-12Z
9
6
5
1
3
2
4
7
8
12
10
11
+5V
#1
KIA358
or
BA10358
8
4
C16
CC104
25V
S0V
J1, J2
TOP VIEW
5 3 1
6 4 2
J3
TOP VIEW
4 2
3 1
PLUG
SIDE
PLUG
SIDE
+5V
R11
620
REF
R5
620
C7
EC100μ
16V
S0V
MC: METALLIZED POLYESTER FILM CAPACITOR
PC: POLYESTER FILM CAPACITOR
CC: CERAMIC CAPACITOR
EC: ALUMINUM ELECTROLYTIC CAPACITOR
J3
4-4PMJ
L9
L2
SBT0260x4
or
FL5R200PNx4
or
DL-6503Cx4
L3
L8
+5V
Q1
2SC5395
C
B
E
C19
EC10μ
16V
TELRL
S0V
R22
150
S0V
REF
R20
1K
R26
1K
S0V
C17
CC104
25V
C18
CC104
25V
R19
18K
R21
18K
C15
CC221
R17
390K
REF
C13 CC221
R16 390K
#1
TELSL
R18
3.3K
S0V

B	**NCU PCB** **(HOMEFAX V3)** (New Zealand)


P3
52089-1320
KO0
KO1
KO2
KO3
KO4
KO5
KO6
+5V
R11 47K
R8 47K
R10 47K
R7 47K
R9 47K
R6 47K
+5V
R4
100K
C6
CC104
GND
#1
GAPNL4
RST
KI0
KI1
KI2
KI3
KI4
KI5
KI6
KI7
+5V
RS
RW
E
LCD0
LCD1
LCD2
LCD3
LCD4
LCD5
LCD6
LCD7
+5V
C7
CC104
GND
P2
52089-1420
P1
S5BPH
R2 470
R1 470
R3 200
C4
CC101
C5
N.C
C3
CC101
GND
+5V
C1
N.C
GND
#1
SDIN
SDOUT
PCLK
KO0
KO1
KO2
KO3
KO4
KO5
KO6
KO7
+5V
PIN0
PIN1
TSTH
GND
PO6
PO5
PO4
PO3
PO2
PO1
PO0
R5
100K
GND
+5V
C8
CC104
C2
N.C.
VDD
GND
GND
GND
+5V
JW1
JW
JW2
JW
JW4
0Ω
JW5
0Ω
JW3
0Ω
GND

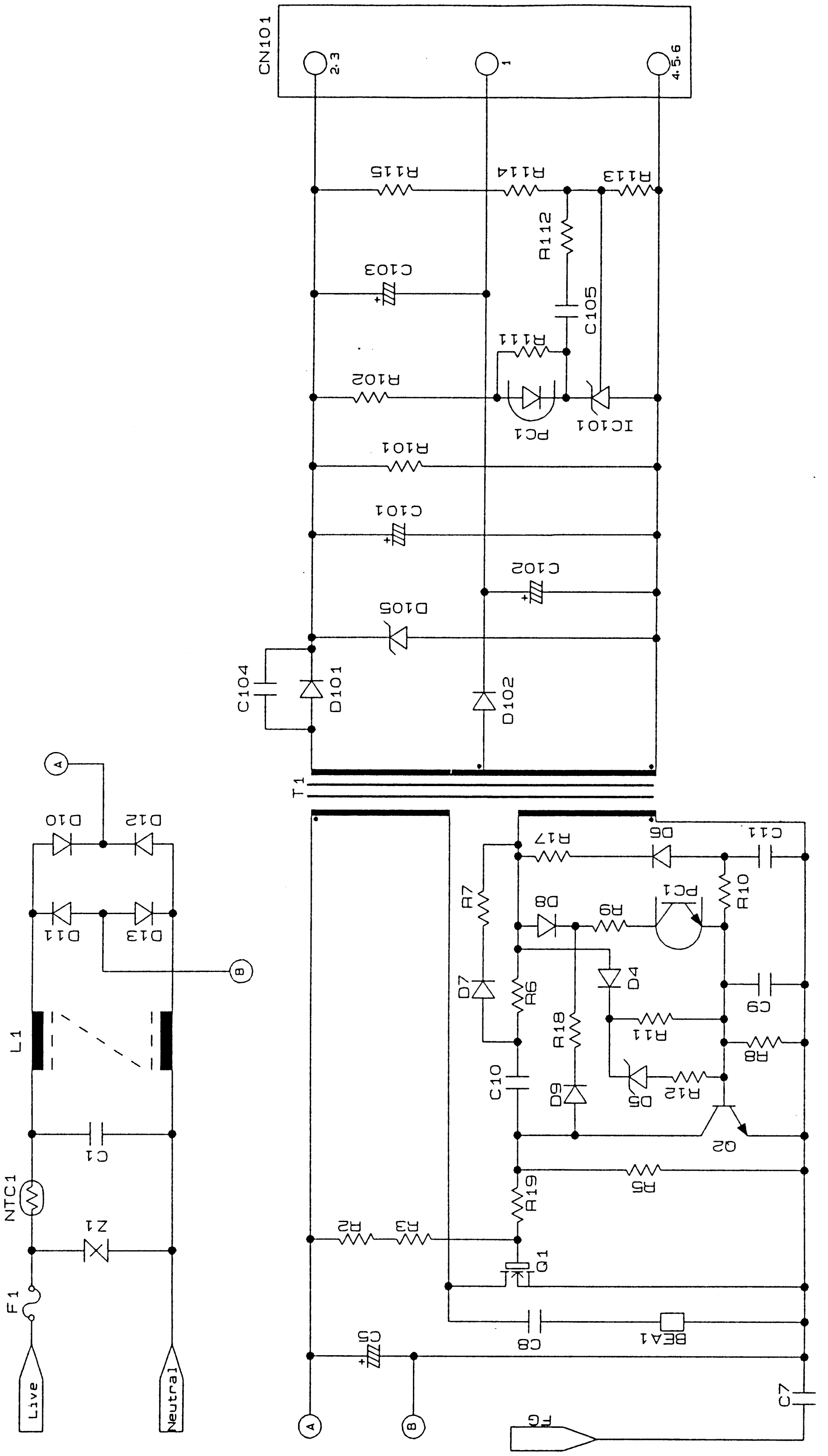
C

Control Panel PCB (FAX255/FAX275/FAX-515/ HOMEFAX V3)

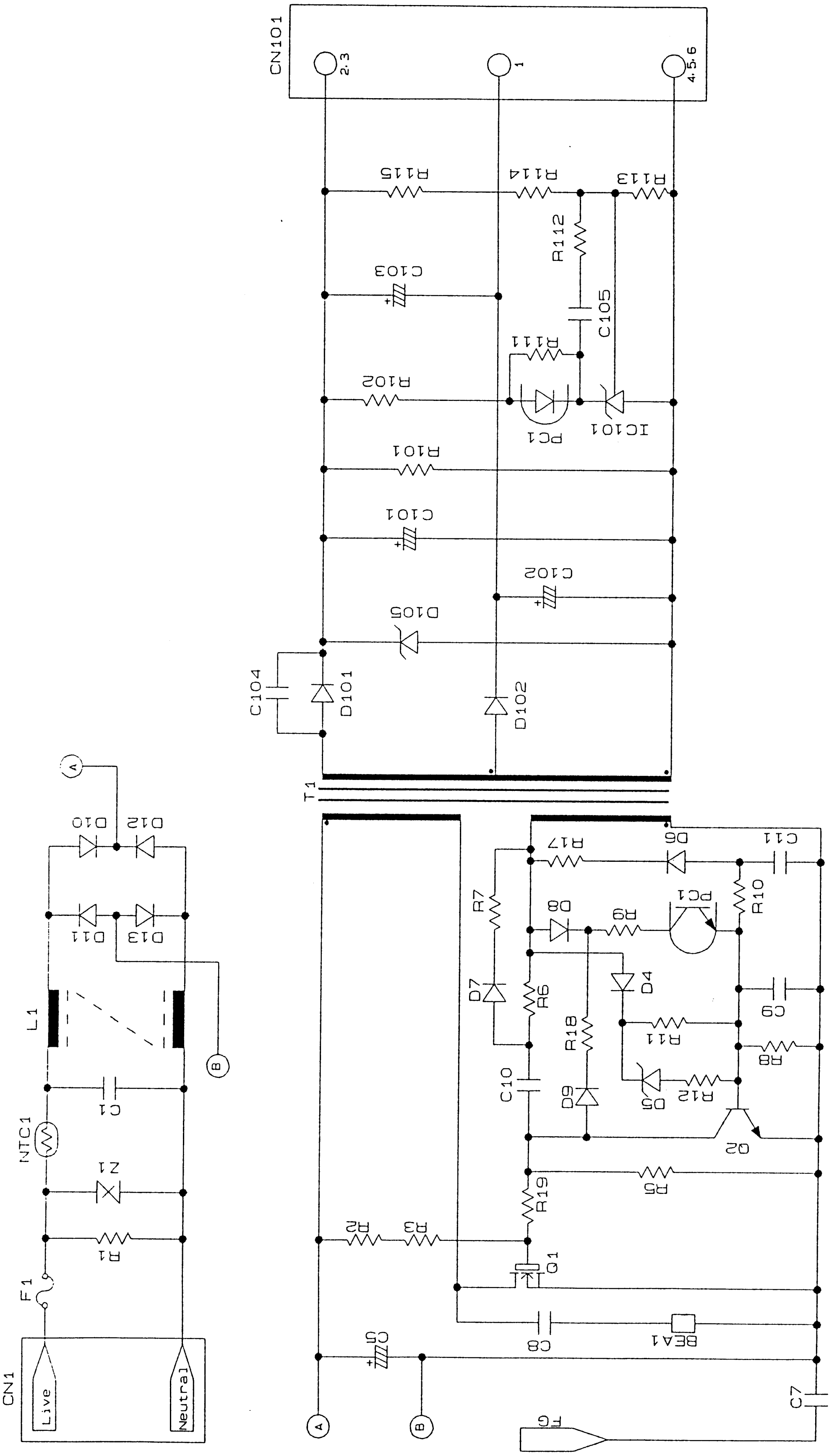

P3
52089-1320
KO0
KO1
KO2
KO3
KO4
KO5
KO6
KI0
KI1
KI2
KI3
R11 47K
R8 47K
R10 47K
R9 47K
R7 47K
R6 47K
+5V
R4
100K
C6
CC104
GND
#1
GAPNL4
RST
KI0
KI1
KI2
KI3
KI4
KI5
KI6
KI7
RS
RW
E
LCD0
LCD1
LCD2
LCD3
LCD4
LCD5
LCD6
LCD7
#1
C7
CC104
P2
52089-1420
P1
S5BPH
R1 470
R3 470
R2 200
SDIN
SDOUT
PCLK
C5
CC101
C4
N.C
C3
CC101
C1
N.C
PIN0
PIN1
TSTH
KO0
KO1
KO2
KO3
KO4
KO5
KO6
KO7
PO6
PO5
PO4
PO3
PO2
PO1
PO0
R5
100K
SW1 SKHVBDx4
SW2
SW3
SW4
KI0
KI1
KI2
KI3
C8
CC104
C2
N.C.
VOD
GND
GND
LED1 SLR-342VR
LED2 BR2272S
R12 470
R13 300
JW1
N.C.
JW2
JW
JW3
0Ω
JW5
0Ω
JW4
0Ω

C

Control Panel PCB (FAX355MC/FAX375MC/FAX-525DT/FAX525MC)


CN101
2-3
1
4.5.6
R115
R114
R113
R112
C103
C105
R111
R102
PC1
IC101
R101
C101
C102
D105
C104
D101
D102
T1
A
D10
D12
D11
D13
B
L1
C1
NTC1
Z1
F1
Live
Neutral
R17
D6
C11
R7
D8
R9
PC1
R10
D7
R6
D4
C9
R18
R11
R8
C10
D9
D5
R12
Q2
R5
R19
R2
R3
Q1
C8
BEA1
C5
C7
A
B
FG

D	Power Supply PCB (100-120 VAC)


CN101
2.3
1
4.5.6
R115
R114
R113
R112
C103
C105
R111
R102
PC1
IC101
R101
C101
C102
D105
C104
D101
D102
T1
D10
D12
D11
D13
L1
C1
NTC1
Z1
R1
F1
CN1
Live
Neutral
A
B
R17
D6
C11
R7
D8
R9
PC1
R10
D7
R6
D4
C9
R18
R11
R8
C10
D9
D5
R12
Q2
R19
R5
R2
R3
Q1
C5
C8
BEA1
C7
FG

D	**Power Supply PCB** **(200-240 VAC)**